

1V84-32414



National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas 77058

NASA-CR-171795

C. 2

COLUMBIA: THE FIRST FIVE FLIGHTS  
ENTRY HEATING DATA SERIES  
VOLUME 6  
THE UPPER LEE SIDE SURFACE CENTERLINE

By

S. D. Williams

July 1984

Prepared Under Contract No. NAS 9-15800  
Lockheed Engineering and Management Services Co., Inc.  
for

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
Johnson Space Center  
Houston, Texas

## DISCUSSION:

Over 2,000 development flight instruments (DFI) were installed on Columbia with the majority of the DFI flight data recorded during ascent and entry (Ref. 1). Additional real-time instrumentation was used to continuously monitor the thermal subsystems during each flight. Successful completion of the first five flights of the Space Shuttle Orbiter has provided sufficient data from radiometers, thermocouples, and pressure transducers to appraise the aerothermodynamic/TPS performance.

The entry heating presented in this report is restricted to the Upper Lee Side Surface Centerline, see Figure 1. A tabulation of the orbiter X, Y coordinates for each instrument can be found in Table I. This data is presented in two Appendices.

Appendix A: Correlation Parameters

Appendix B: Flight Data

As an aid to the reader, the page numbers for the specific correlation parameters and flight data for each Appendix can be found in Tables II and III.

The surface heating and temperature data presented in this volume is based on the thermal analysis at each individual location via the JSC NONLIN/INVERSE computer program Ref. 2. Values of angle-of-attack and the derived free stream Mach number were obtained from JSC/MPAD Best Estimated Trajectory (BET) data tapes for each flight. The corresponding data values for Normal Shock Reynolds number (Ref. 3), reference heating rate, reference film coefficient, and total enthalpy were obtained via the MINIVER computer program (Ref. 4). Values of  $h/h_{ref}$  were computed using a  $0.9 H_T$  recovery enthalpy. The comparison of wind tunnel data ( $0.9 H_T$ ) with flight data for V07T9802A ( $X/L=0.026$ ) and V07T9804A ( $X/L=0.035$ ) were obtained by linear interpolation from the  $X/L=0.025$  and  $X/L=0.050$  wind tunnel data. Likewise, the wind tunnel data for V07T9806A ( $X/L=0.080$ ) and V07T9808A ( $X/L=0.98$ ) were obtained by linear interpolation from wind tunnel data at  $X/L=0.075$  and  $X/L=0.100$ . Linear interpolation of wind tunnel data for V09T9518A

(X/L=0.595) and V07T9232A (X/L=0.791) were obtained at X/L=0.550 and X/L=0.600, and X/L=0.700 and X/L=0.800, respectively. All other wind tunnel data was taken at X/L locations ( $\pm 0.001$ ) corresponding to flight measurement locations. No wind tunnel data was available for interpolation for V07T9814A (X/L=0.246) and V07T9819A (X/L=0.298) due to wind tunnel test instrument malfunction.

At the wind tunnel conditions, Mach 8, (Ref. 5) the Normal Shock Reynolds number is .1121 times the Reynolds number based on freestream parameters.

All heating rates were calculated with a view factor of 1. The surface emissivity of all instruments was assumed to be 0.80. A majority of the heating rates compared to flight parameters ( $\alpha$ ,  $M_\infty$ , and  $Re_{Ns}$ ) are presented on a log scale with imposed limits of  $10^{-3} \leq h/h_{ref} \leq 1$  except for V07T9814A, V07T9819A, V07T9826A, V07T9832A, V09T9518A, and V07T9845A which had imposed limits of  $10^{-4} \leq h/h_{ref} \leq 1$ .

Entry heating data for other vehicle areas is presented in additional volumes. Volume 1: An overview, see Reference 6, contains the underlying assumptions, detailed trajectory information, and pertinent information for the integration of all subsequent volumes. In order to provide an adequate overview of the entry heating, Volume 1 will be the last released publication in this series of reports.

After the publication and distribution of Volume 5 (Ref. 7) it was observed that the numerical values of the Normal Shock Reynolds numbers flagged on the  $h/h_{ref}$  vs.  $\alpha$  plots were incorrectly labeled. Although the flagged values were correct with respect to time and  $\alpha$  the free stream values instead of the normal shock values were printed. The analyst can obtain the correct value for wind tunnel conditions either by multiplying the stated value by 0.1121 or by using the values shown in Table IV. This report has maintained the error in printing the free stream value for consistency between volumes 2 through 6. The author regrets any inconvenience this has caused for the serious researcher.

## REFERENCES:

1. Smith, J.A., STS-3 Structural & Aerothermodynamic Pressure and Aerothermodynamics & Thermal Protection System Measurement Locations, NASA JSC 17889, January 15, 1982.
2. Williams, S. D. and Curry, D. M., An Analytical and Experimental Study Using a Single Embedded Thermocouple, J. Spacecraft and Rockets, Vol. 14, October 1977, pp. 632-637.
3. Ried, R. C., Jr.; Goodrich, W.D.; Strouhal, G.; and Curry, D. M.: The Importance of Boundary Layer Transition to the Space Shuttle Design, Proceedings of the Boundary Layer Transition Workshop held Nov. 3-5, 1971. Aerospace Report No. TOR-0172 (S2816-16) -5, Dec. 20, 1971.
4. Hender, D. R., A Miniature Version of the JA70 Aerodynamic Heating Computer Program, H800 (MINIVER) MDC G0462, McDonnell Douglas Astronautics Company, Huntington Beach, CA, June 1970, Revised January 1972.
5. Martindale, W. R., Kaul, C. E., and Nutt, K. W., Test Results from the NASA/Rockwell International Space Shuttle Orbiter Heating Test (OH398) conducted in the AEDC-VKF Tunnel B, AEDC-DR-75-17 VonKarman Gas Dynamics Facility, ARO, Inc., Arnold Engineering Development Center, Arnold Air Force Station, Tennessee, Feb. 28, 1975.
6. Williams, S. D., Columbia: The First Five Flights Entry Heating Data Series, Volume 1, An Overview.
7. Williams, S. D., Columbia: The First Five Flights Entry Heating Data Series, Vol. 5, The Side Fuselage and Payload Bay Door, NASA-CR-171732, January 1984.



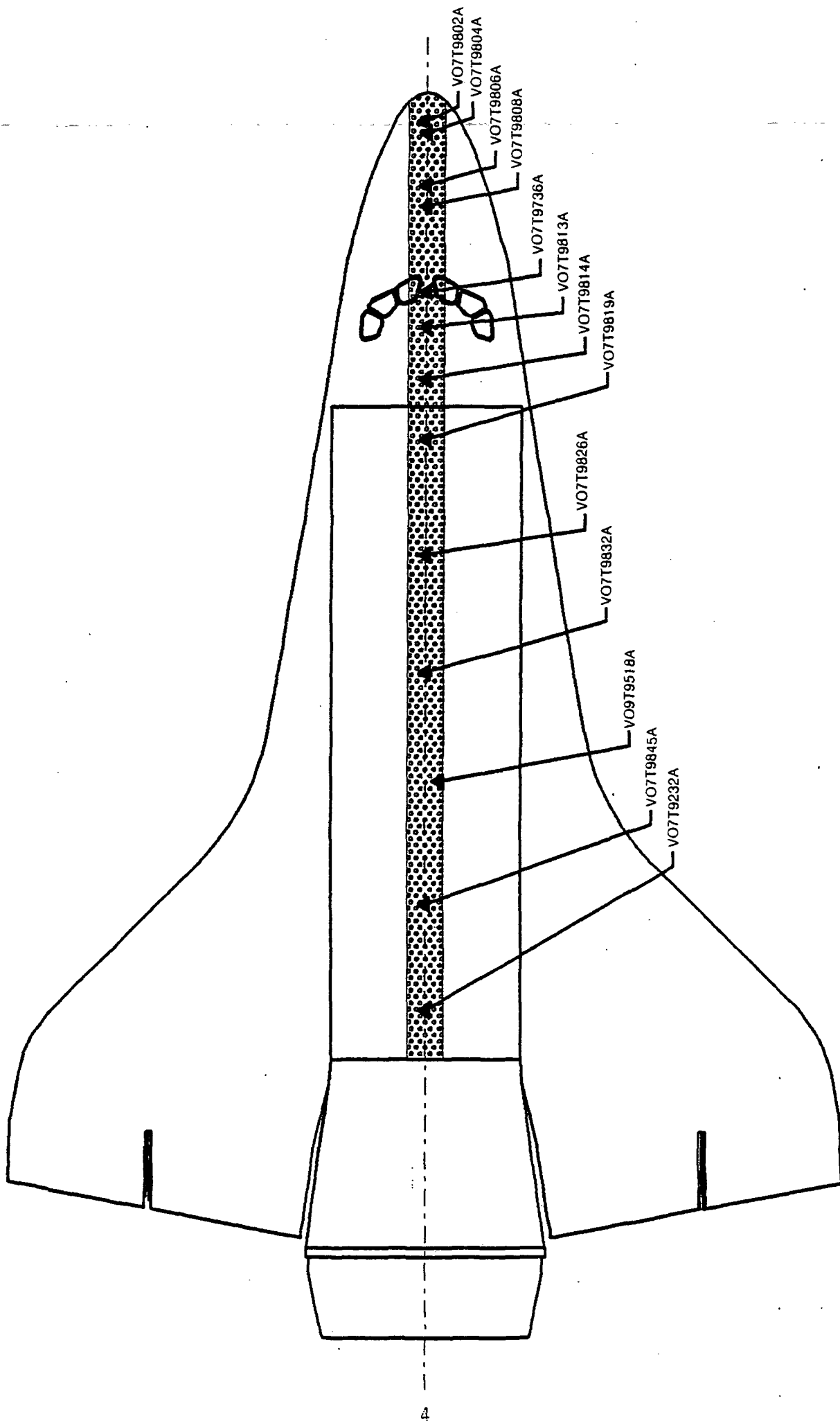


FIG. 1 Measurement Locations on the Upper Centerline

TABLE I  
UPPER SURFACE CENTERLINE COORDINATES

<u>Measurement</u>	<u>X/L</u>	<u>X</u>	<u>Y</u>
V07T9802A	0.026	268.3	-3.0
V07T9804A	0.035	279.6	0.0
V07T9806A	0.080	337.6	0.0
V07T9808A	0.098	361.1	-1.0
V07T9736A	0.171	454.4	0.0
V07T9813A	0.202	494.3	1.9
V07T9814A	0.246	551.3	0.9
V07T9819A	0.298	617.5	0.5
V07T9826A	0.398	746.4	0.5
V07T9832A	0.500	877.0	3.5
V09T9518A	0.595	999.0	-15.0
V07T9845A	0.700	1134.0	1.5
V07T9232A	0.791	1251.6	0.5

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TABLE II  
PAGE NUMBERS FOR APPENDIX A:  
CORRELATION PARAMETERS

			STS-FLIGHT				
<u>FLIGHT PARAMETER</u>			<u>STS-1</u>	<u>STS-2</u>	<u>STS-3</u>	<u>STS-4</u>	<u>STS-5</u>
$\alpha$	vs	t	1	2	3	4	5
$M_{\infty}$	vs	t	6	7	8	9	10
$Re_{NS}$	vs	t	11	12	13	14	15
$\alpha$	vs	$M_{\infty}$	16	17	18	19	20
$\alpha$	vs	$Re_{NS}$	21	22	23	24	25
$M_{\infty}$	vs	$Re_{NS}$	26	27	28	29	30
$q_{ref}$	vs	t	31	32	33	34	35
$q_{ref}$	vs	$\alpha$	36	37	38	39	40
$q_{ref}$	vs	$M_{\infty}$	41	42	43	44	45
$q_{ref}$	vs	$Re_{NS}$	46	47	48	49	50
$h_{ref}$	vs	t	51	52	53	54	55
$h_{ref}$	vs	$\alpha$	56	57	58	59	60
$h_{ref}$	vs	$M_{\infty}$	61	62	63	64	65
$h_{ref}$	vs	$Re_{NS}$	66	67	68	69	70

TABLE III - PAGE NUMBERS FOR APPENDIX B: FLIGHT DATA

MEASUREMENT				STS-FLIGHT				
				STS-1	STS-2	STS-3	STS-4	STS-
V07T9802A	- $h/h_{ref}$	vs	$\alpha$	1	2	3	4	5
	- $h/h_{ref}$	vs	$M_\infty$	6	7	8	9	10
	- $h/h_{ref}$	vs	$Re_{NS}$	11	12	13	14	15
	- $\dot{q}_{conv}$	vs	$t$	16	17	18	19	20
	- $T_s$	vs	$t$	21	22	23	24	25
V07T9804A	- $h/h_{ref}$	vs	$\alpha$	26	27	28	29	30
	- $h/h_{ref}$	vs	$M_\infty$	31	32	33	34	35
	- $h/h_{ref}$	vs	$Re_{NS}$	36	37	38	39	40
	- $\dot{q}_{conv}$	vs	$t$	41	42	43	44	45
	- $T_s$	vs	$t$	46	47	48	49	50
V07T9806A	- $h/h_{ref}$	vs	$\alpha$	51	52	53	54	55
	- $h/h_{ref}$	vs	$M_\infty$	56	57	58	59	60
	- $h/h_{ref}$	vs	$Re_{NS}$	61	62	63	64	65
	- $\dot{q}_{conv}$	vs	$t$	66	67	68	69	70
	- $T_s$	vs	$t$	71	72	73	74	75
V07T9808A	- $h/h_{ref}$	vs	$\alpha$	76	77	78	79	80
	- $h/h_{ref}$	vs	$M_\infty$	81	82	83	84	85
	- $h/h_{ref}$	vs	$Re_{NS}$	86	87	88	89	90
	- $\dot{q}_{conv}$	vs	$t$	91	92	93	94	95
	- $T_s$	vs	$t$	96	97	98	99	100
V07T9736A	- $h/h_{ref}$	vs	$\alpha$	101	102	103	104	105
	- $h/h_{ref}$	vs	$M_\infty$	106	107	108	109	110
	- $h/h_{ref}$	vs	$Re_{NS}$	111	112	113	114	115
	- $\dot{q}_{conv}$	vs	$t$	116	117	118	119	120
	- $T_s$	vs	$t$	121	122	123	124	125

TABLE III - PAGE NUMBERS FOR APPENDIX B: FLIGHT DATA

MEASUREMENT				STS-FLIGHT				
				STS-1	STS-2	STS-3	STS-4	STS-5
V07T9813A	- $h/h_{ref}$	vs	$\alpha$	126	127	128	129	130
	- $h/h_{ref}$	vs	$M_\infty$	131	132	133	134	135
	- $h/h_{ref}$	vs	$Re_{NS}$	136	137	138	139	140
	- $\dot{q}_{conv}$	vs	t	141	142	143	144	145
	- $T_s$	vs	t	146	147	148	149	150
V07T9814A	- $h/h_{ref}$	vs	$\alpha$	151	152	153	154	155
	- $h/h_{ref}$	vs	$M_\infty$	156	157	158	159	160
	- $h/h_{ref}$	vs	$Re_{NS}$	161	162	163	164	165
	- $\dot{q}_{conv}$	vs	t	166	167	168	169	170
	- $T_s$	vs	t	171	172	173	174	175
V07T9819A	- $h/h_{ref}$	vs	$\alpha$	N/A	N/A	N/A	N/A	176
	- $h/h_{ref}$	vs	$M_\infty$	N/A	N/A	N/A	N/A	177
	- $h/h_{ref}$	vs	$Re_{NS}$	N/A	N/A	N/A	N/A	178
	- $\dot{q}_{conv}$	vs	t	N/A	N/A	N/A	N/A	179
	- $T_s$	vs	t	N/A	N/A	N/A	N/A	180
V07T9826A	- $h/h_{ref}$	vs	$\alpha$	N/A	N/A	181	182	183
	- $h/h_{ref}$	vs	$M_\infty$	N/A	N/A	184	185	186
	- $h/h_{ref}$	vs	$Re_{NS}$	N/A	N/A	187	188	189
	- $\dot{q}_{conv}$	vs	t	N/A	N/A	190	191	192
	- $T_s$	vs	t	N/A	N/A	193	194	195
V07T9832A	- $h/h_{ref}$	vs	$\alpha$	N/A	N/A	196	197	198
	- $h/h_{ref}$	vs	$M_\infty$	N/A	N/A	199	200	201
	- $h/h_{ref}$	vs	$Re_{NS}$	N/A	N/A	202	203	204
	- $\dot{q}_{conv}$	vs	t	N/A	N/A	205	206	207
	- $T_s$	vs	t	N/A	N/A	208	209	210

TABLE III - PAGE NUMBERS FOR APPENDIX B: FLIGHT DATA

MEASUREMENT				STS-FLIGHT				
				STS-1	STS-2	STS-3	STS-4	STS-
V09T9518A	- $h/h_{ref}$	vs	$\alpha$	211	212	213	214	215
	- $h/h_{ref}$	vs	$M_\infty$	216	217	218	219	220
	- $h/h_{ref}$	vs	$Re_{NS}$	221	222	223	224	225
	- $\dot{q}_{conv}$	vs	$t$	226	227	228	229	230
	- $T_s$	vs	$t$	231	232	233	234	235
V07T9845A	- $h/h_{ref}$	vs	$\alpha$	N/A	N/A	236	237	238
	- $h/h_{ref}$	vs	$M_\infty$	N/A	N/A	239	240	241
	- $h/h_{ref}$	vs	$Re_{NS}$	N/A	N/A	242	243	244
	- $\dot{q}_{conv}$	vs	$t$	N/A	N/A	245	246	247
	- $T_s$	vs	$t$	N/A	N/A	248	249	250
V07T9232A	- $h/h_{ref}$	vs	$\alpha$	N/A	N/A	251	252	253
	- $h/h_{ref}$	vs	$M_\infty$	N/A	N/A	254	255	256
	- $h/h_{ref}$	vs	$Re_{NS}$	N/A	N/A	257	258	259
	- $\dot{q}_{conv}$	vs	$t$	N/A	N/A	260	261	262
	- $T_s$	vs	$t$	N/A	N/A	263	264	265

TABLE IV  
Correlation Between Free Stream and Normal Shock Reynolds  
Numbers at Wind Tunnel Conditions

0.0175 Scale $Re_{\infty}/ft$ $\times 10^6$	107 ft. Length $Re_{\infty}$ $\times 10^6$	107 ft. Length $Re_{NS}$ $\times 10^5$
0.50	0.936	1.050
1.00	1.873	2.099
1.50	2.809	3.149
2.00	3.745	4.198
2.50	4.681	5.248
3.00	5.618	6.297
3.50	6.554	7.347
3.70	6.928	7.767

APPENDIX A

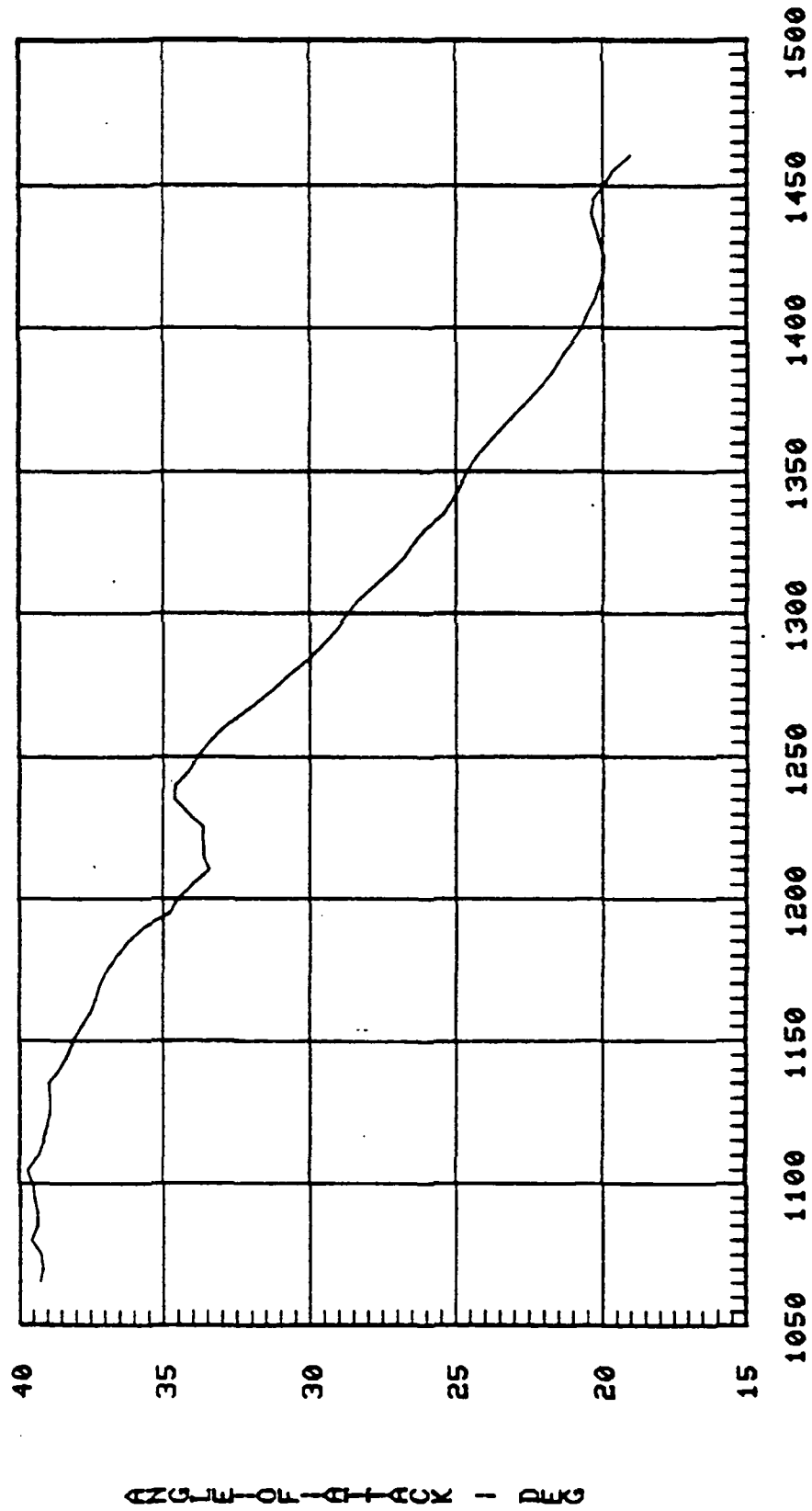
CORRELATION PARAMETERS



# STS-1 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

1065-1460 SEC

STS-1

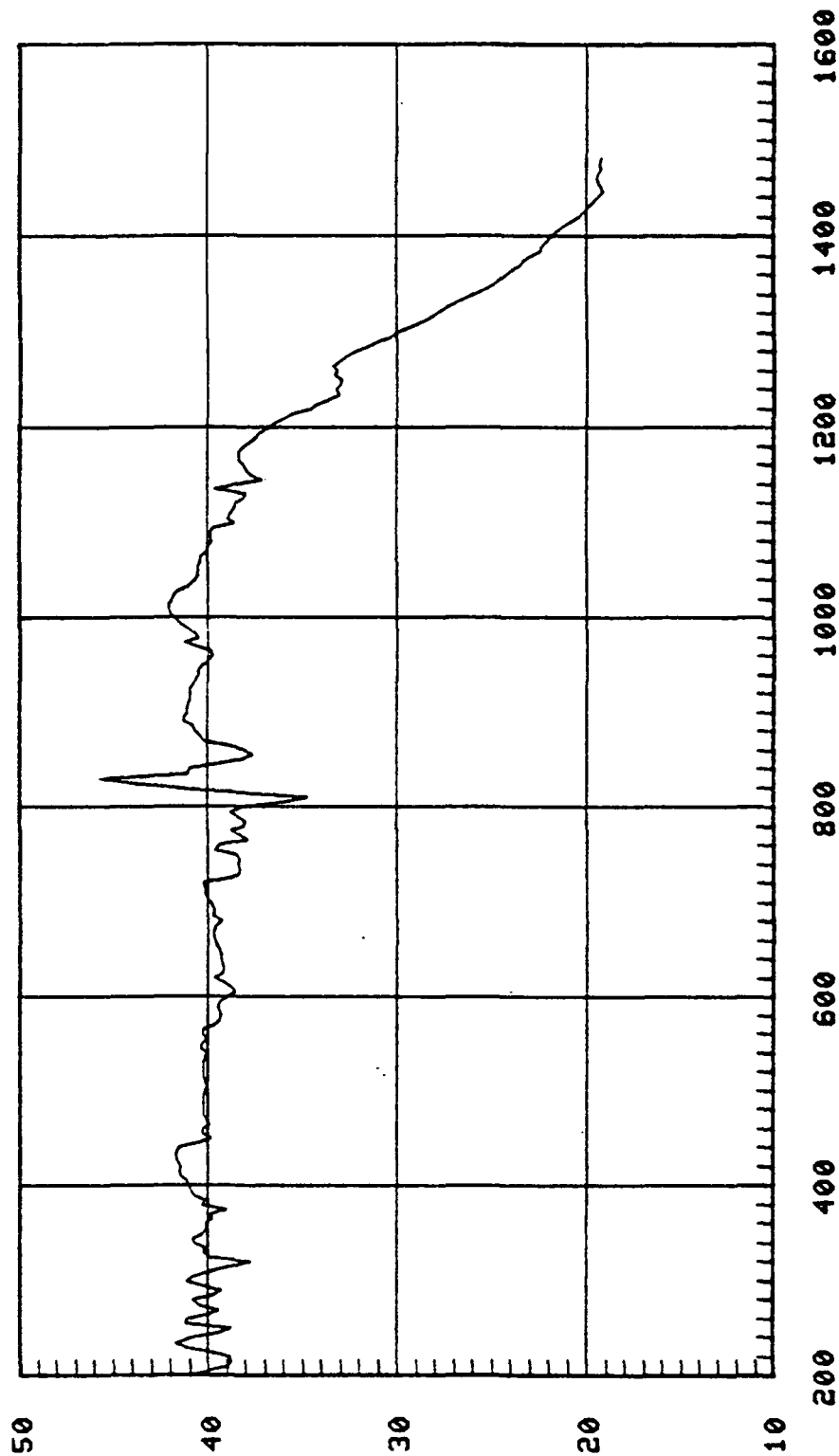


06/18/84  
BASE TIME • 09040744.000 SEC.  
TIME - SECONDS

# STS-2 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

STS-2 200-1480 SEC

STS-2



06/18/84  
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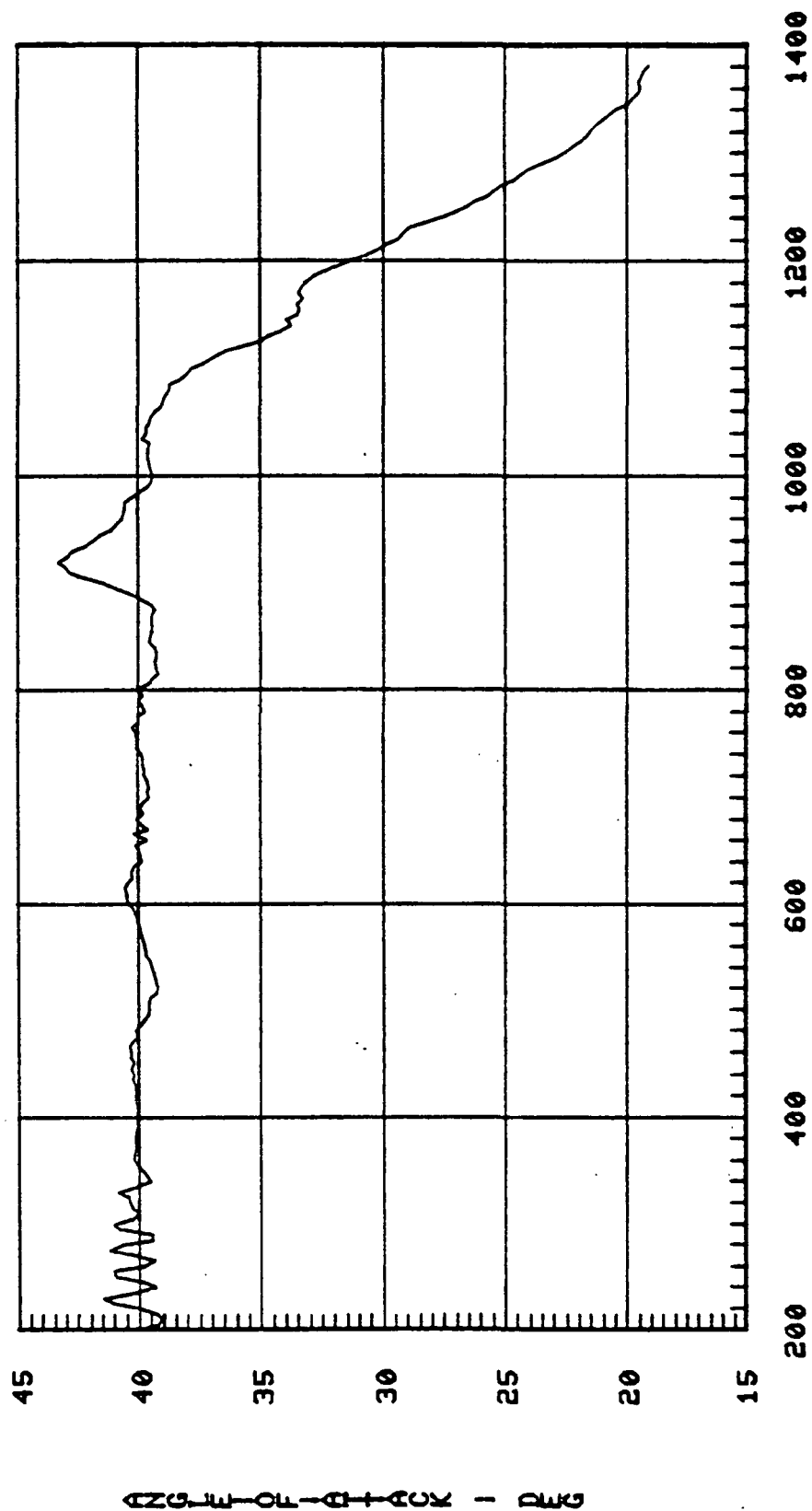
TIME - SECONDS

ANGLE OF ATTACK - DEG

# STS-3 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

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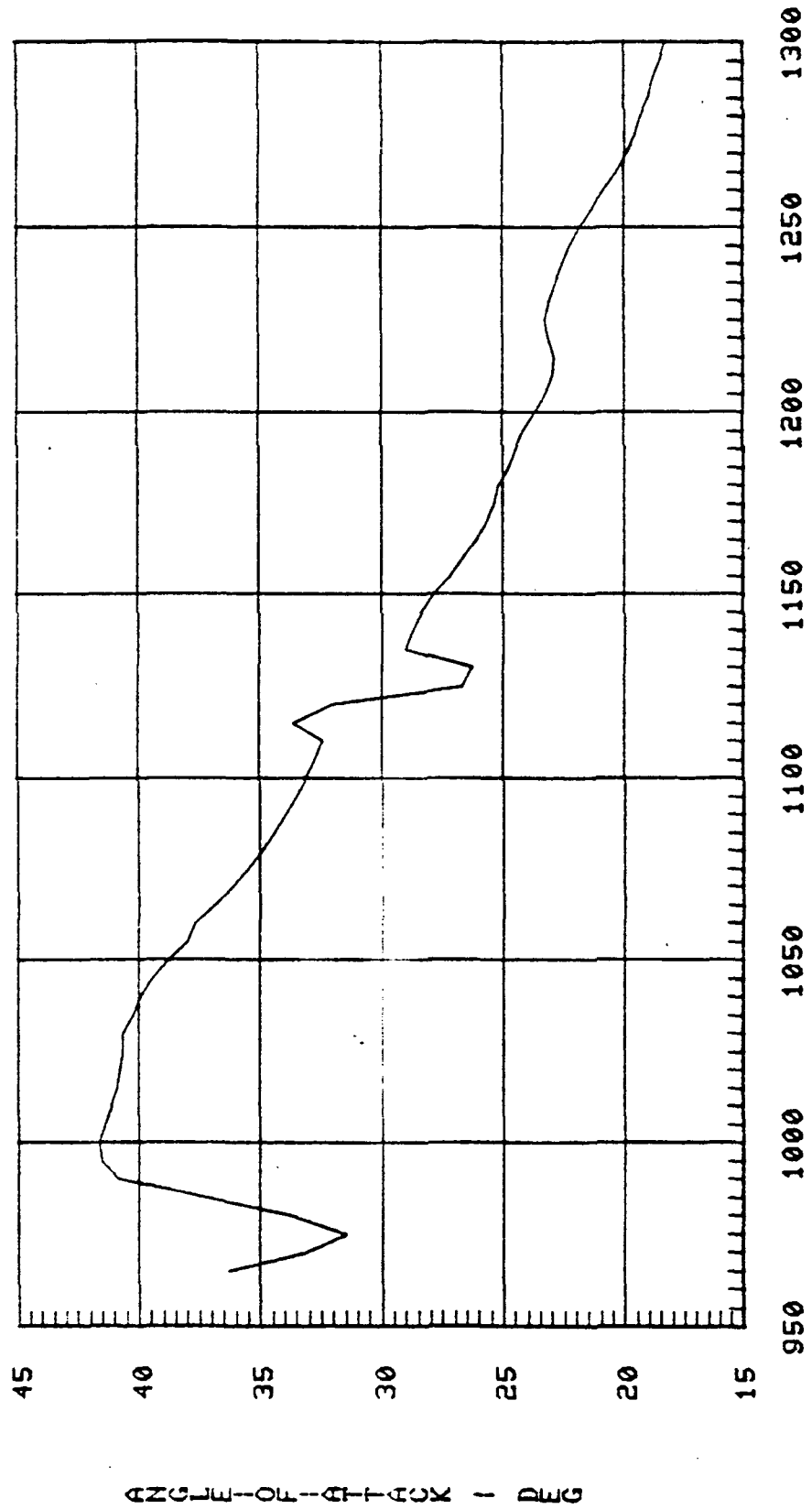
STS-3



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ST-4 905 100 000

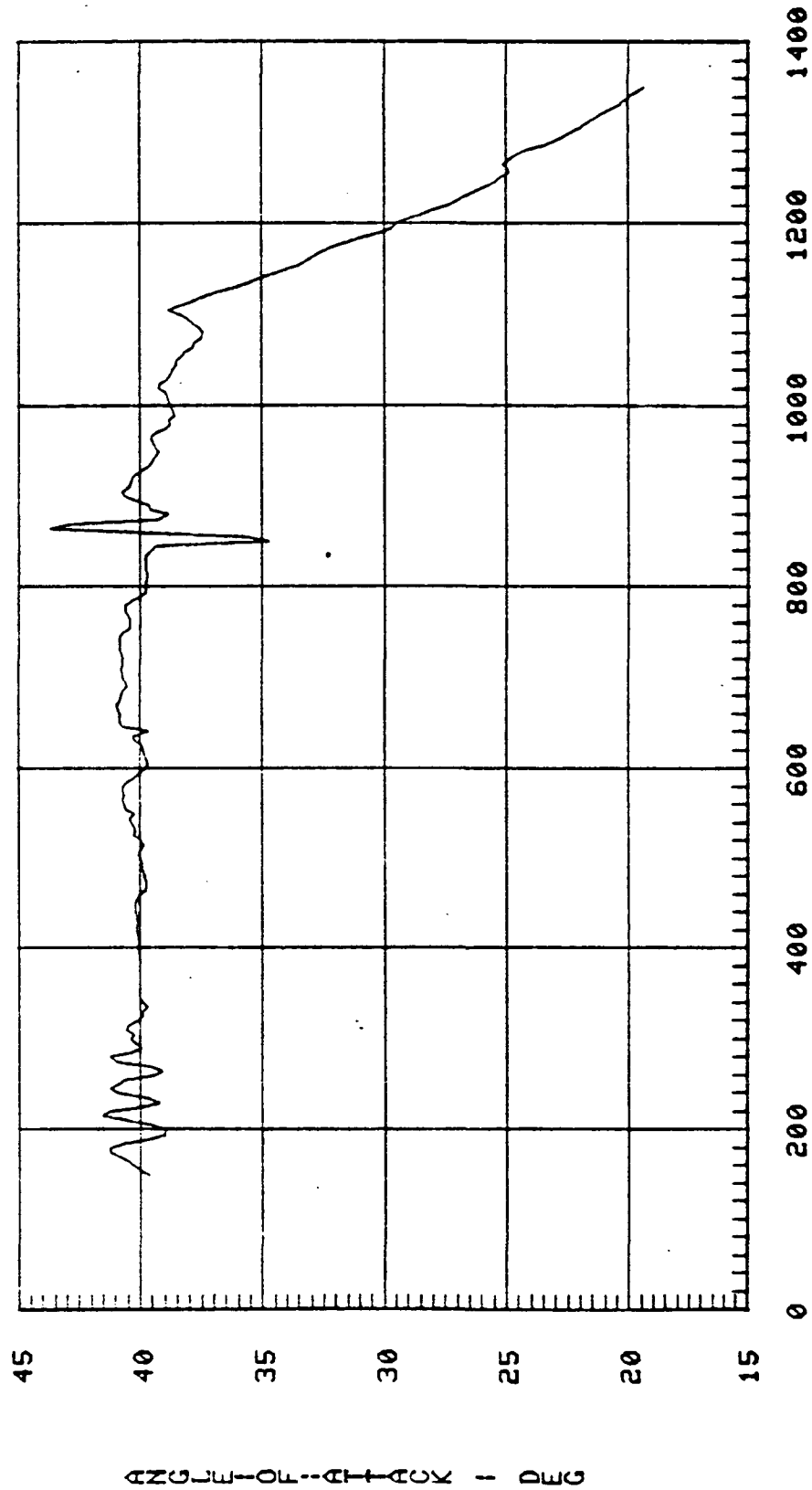


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# STS-5 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

STS-5 150-1350 SEC

STS-5

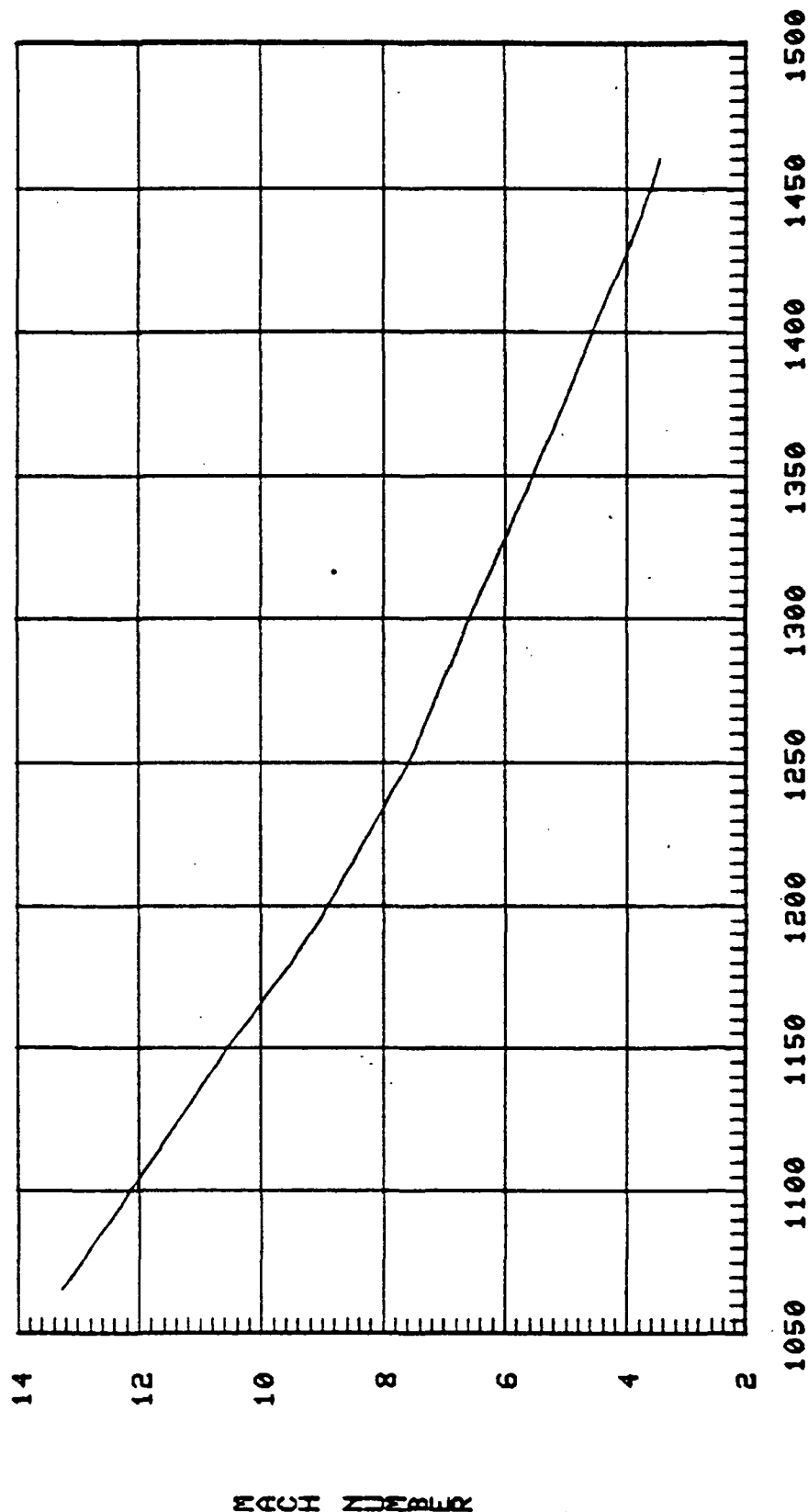


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1065-1460 SEC

STS-1



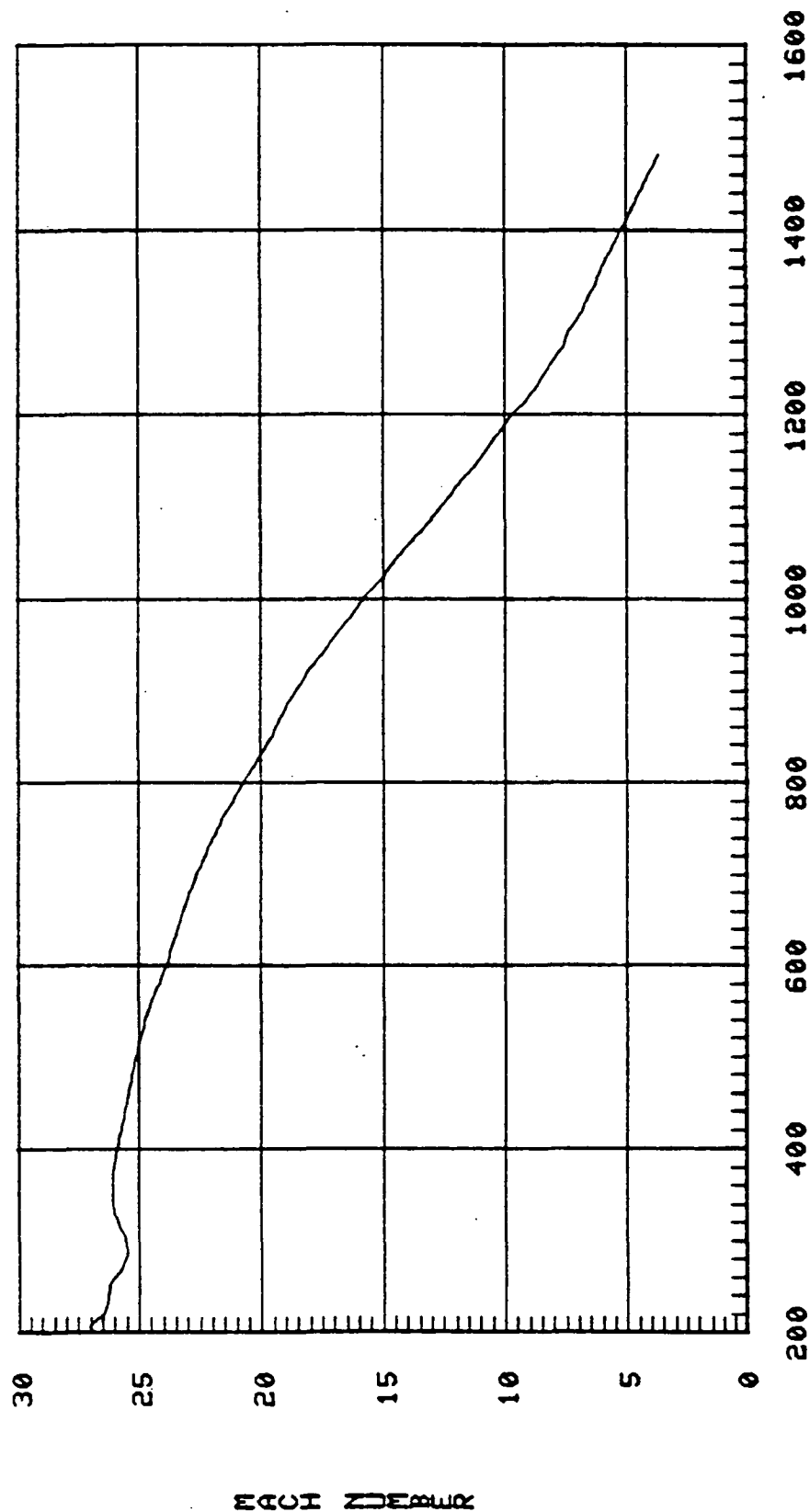
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TIME - SECONDS

HEIGHT IN FEET

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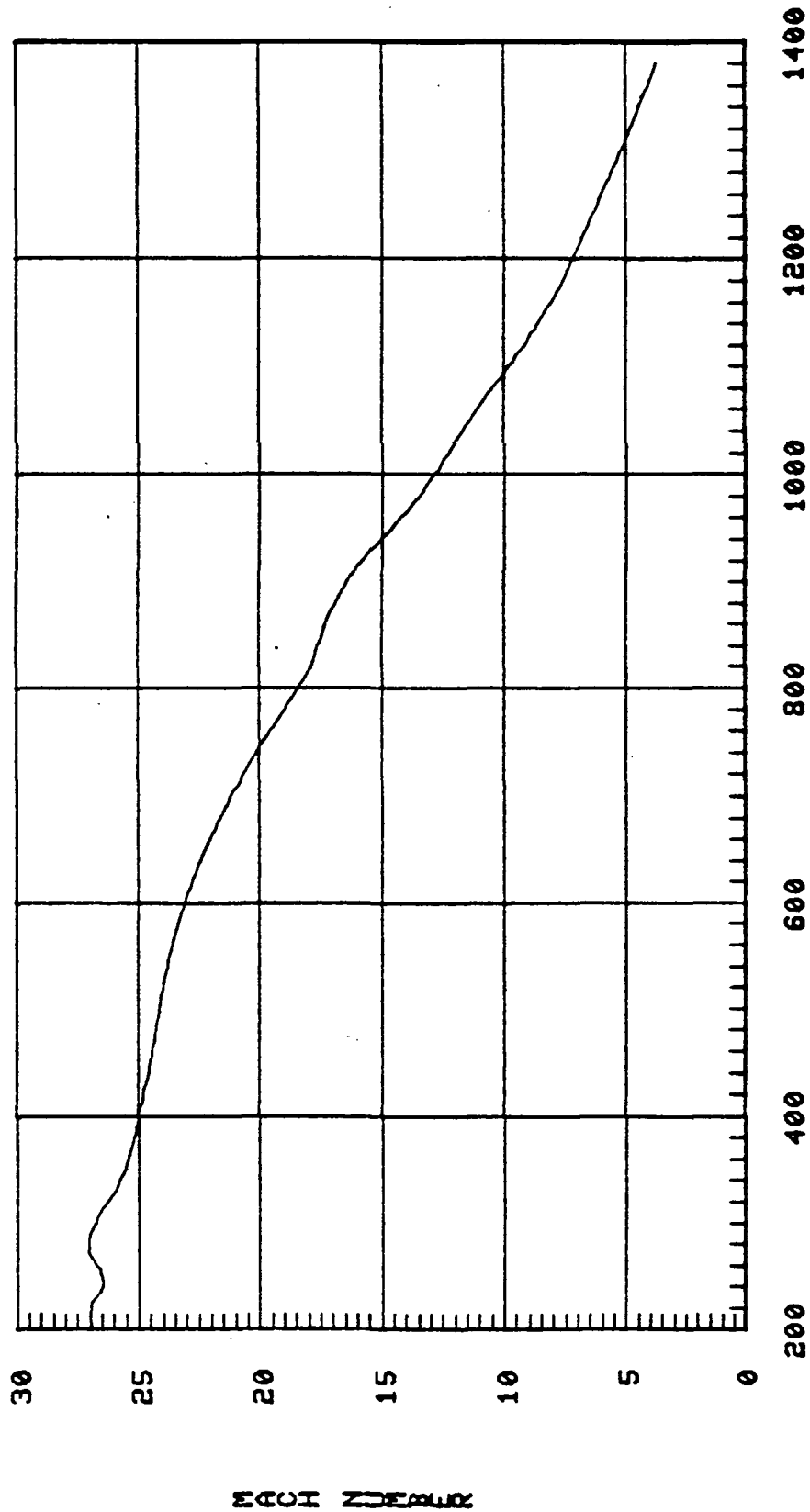
STS-2 200-1480 SEC



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STS-3 200-1380 SEC



06/18/84  
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TIME - SECONDS

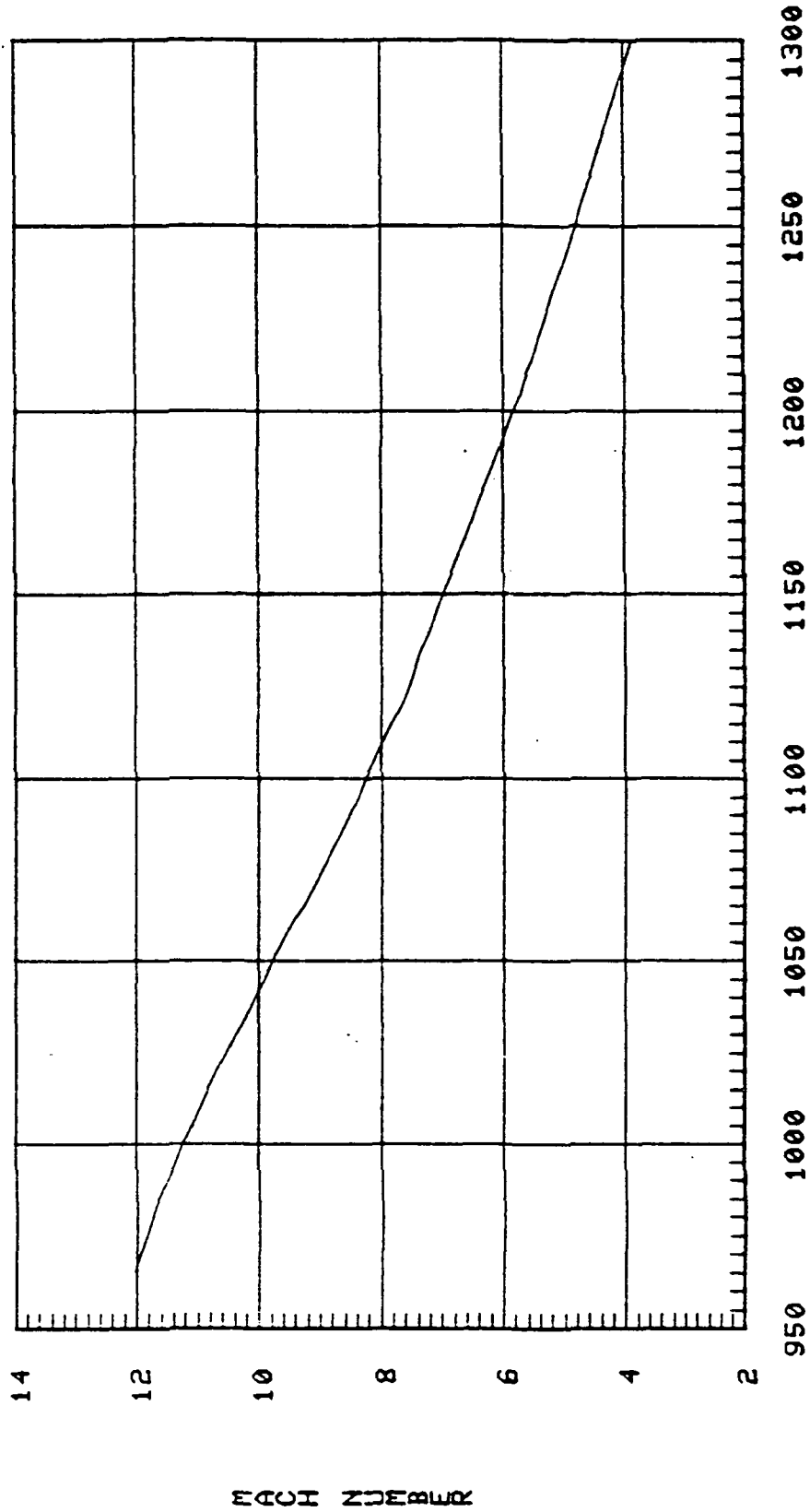
MACH NUMBER



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STS-4 565-1300 SEC

565-1300 SEC

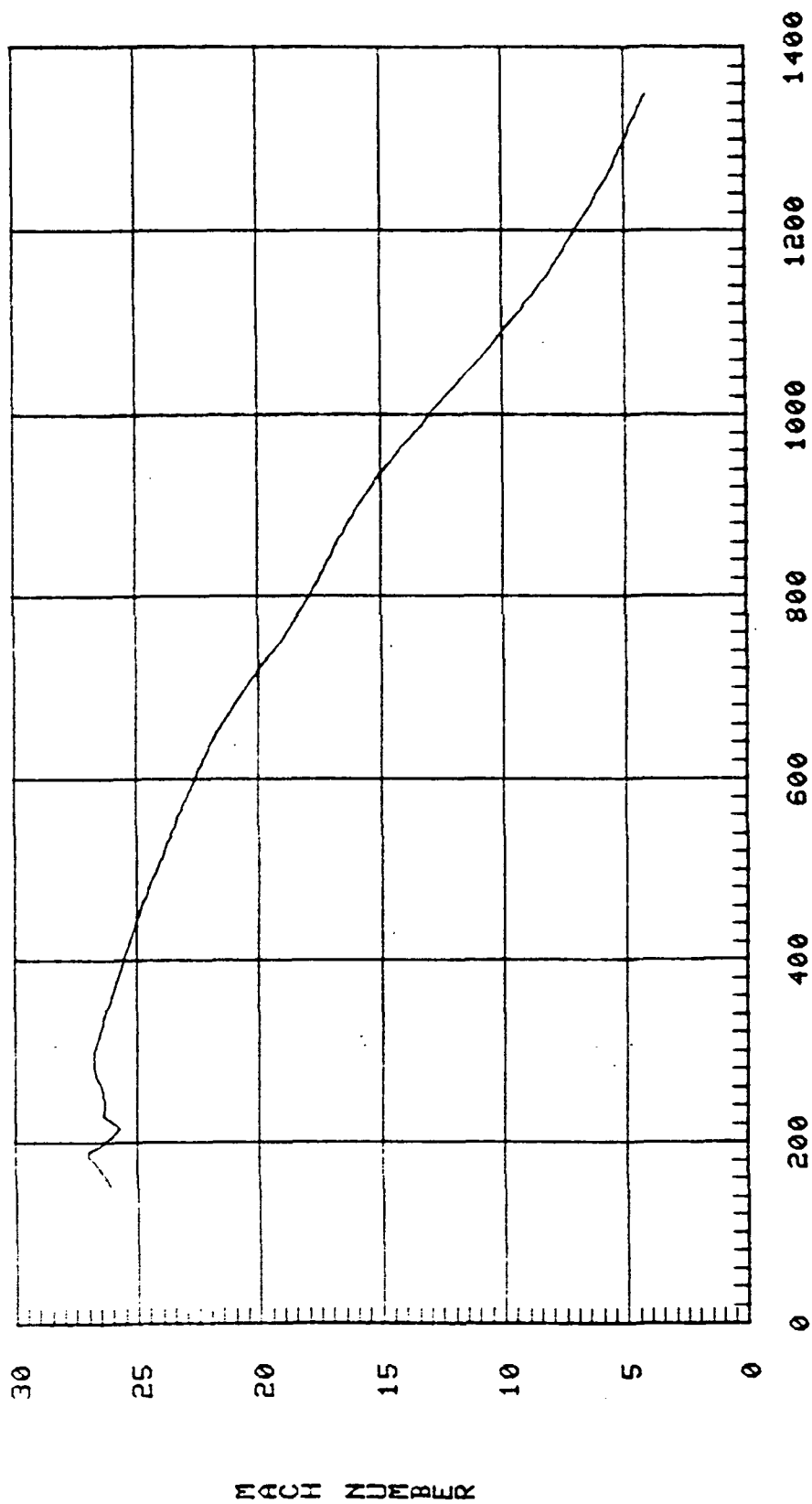


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EACH NUMBER

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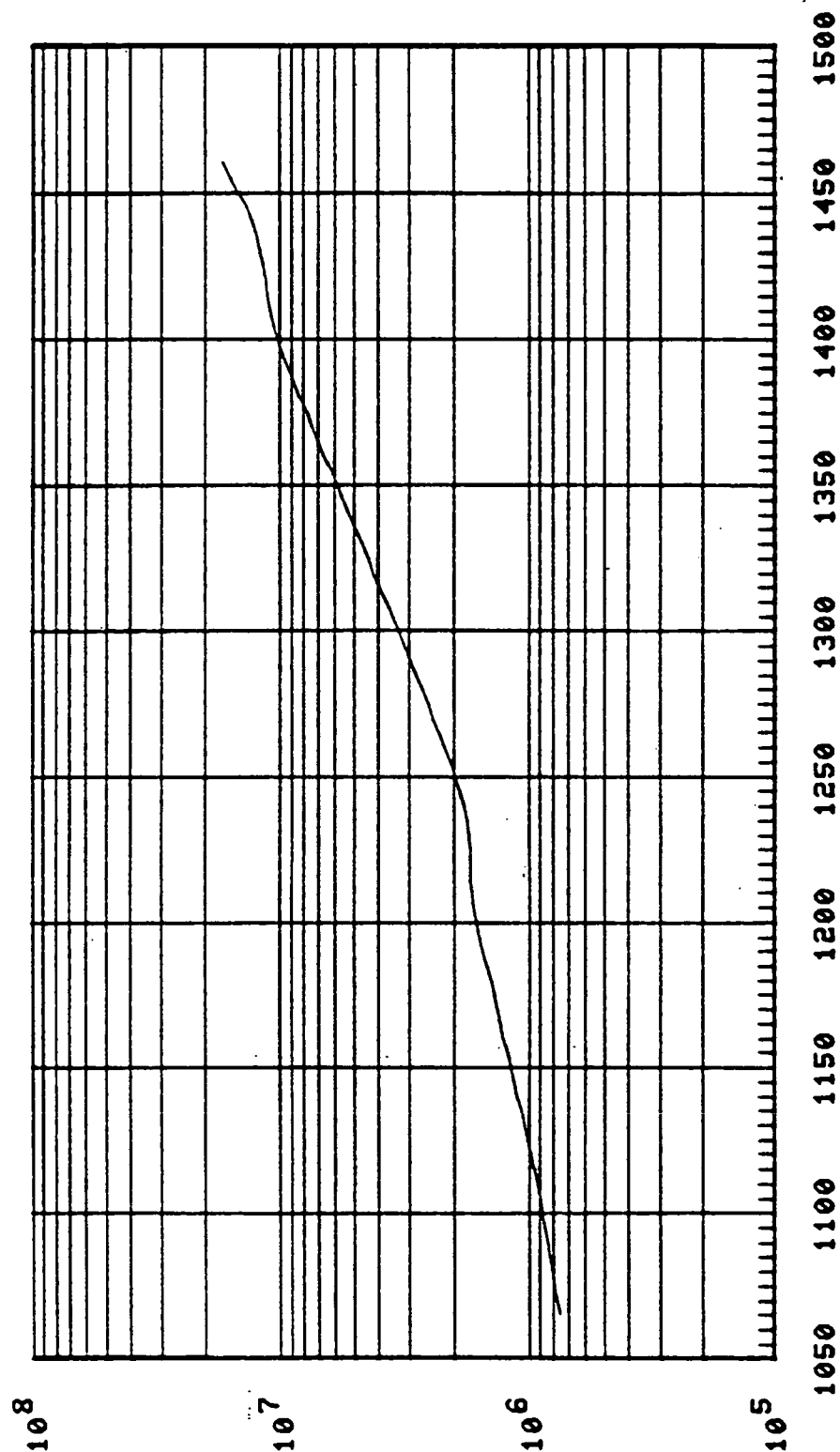
STS-5  
150-1350 SEC



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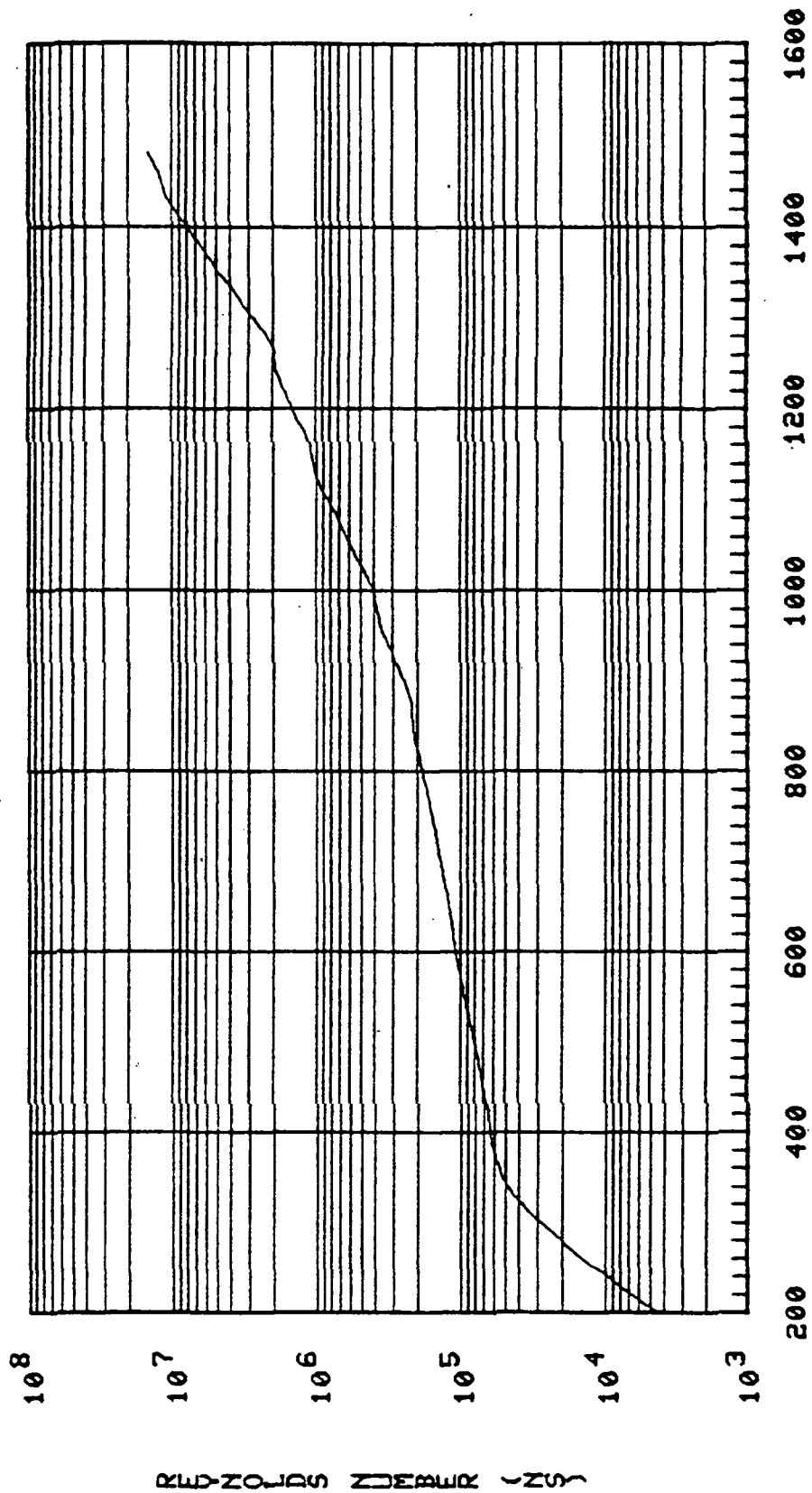


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200-1400 SEC

STS-2



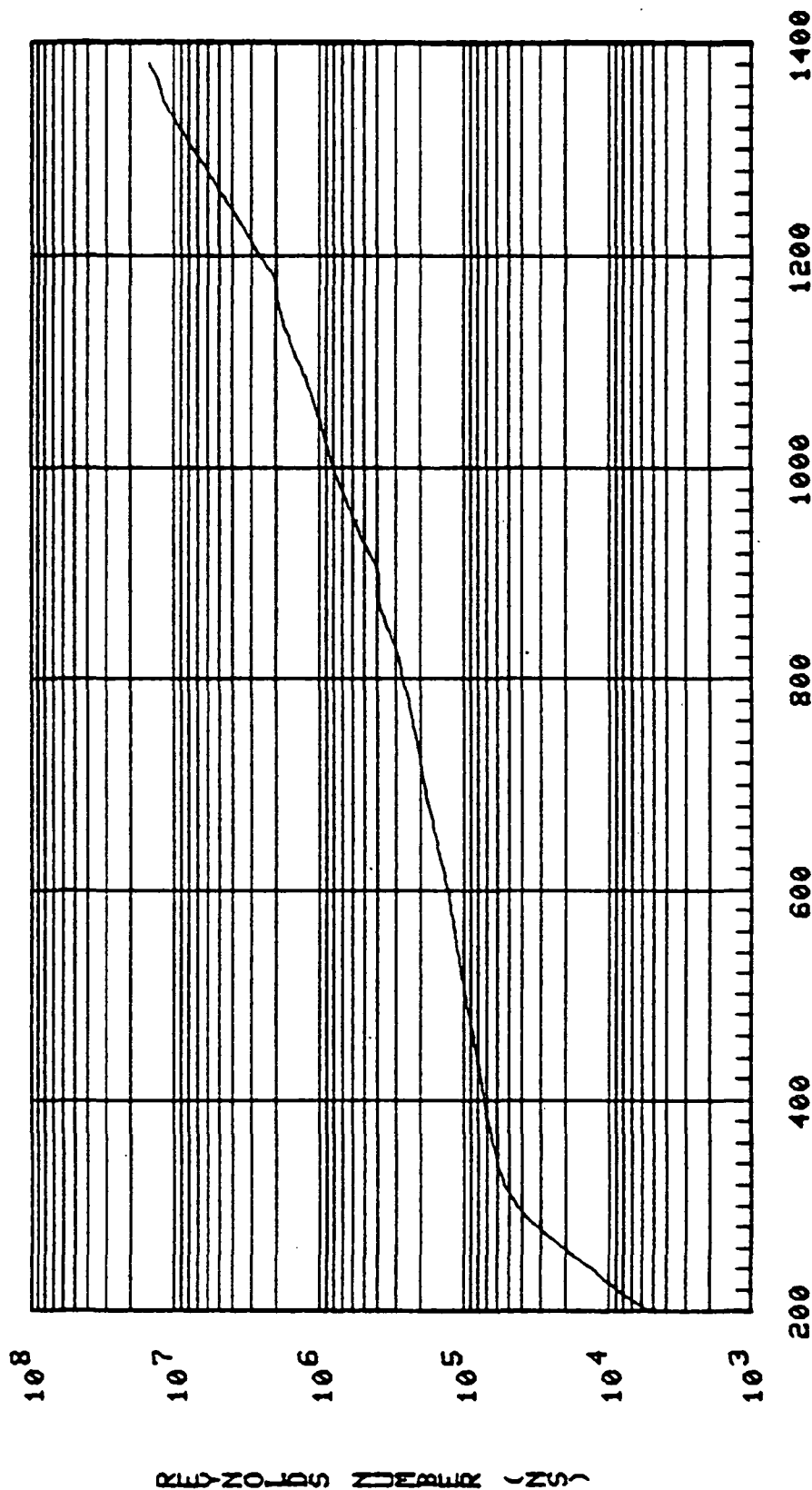
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TIME - SECONDS

REYNOLDS NUMBER (NRS)

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STS-3 200-1380 SEC

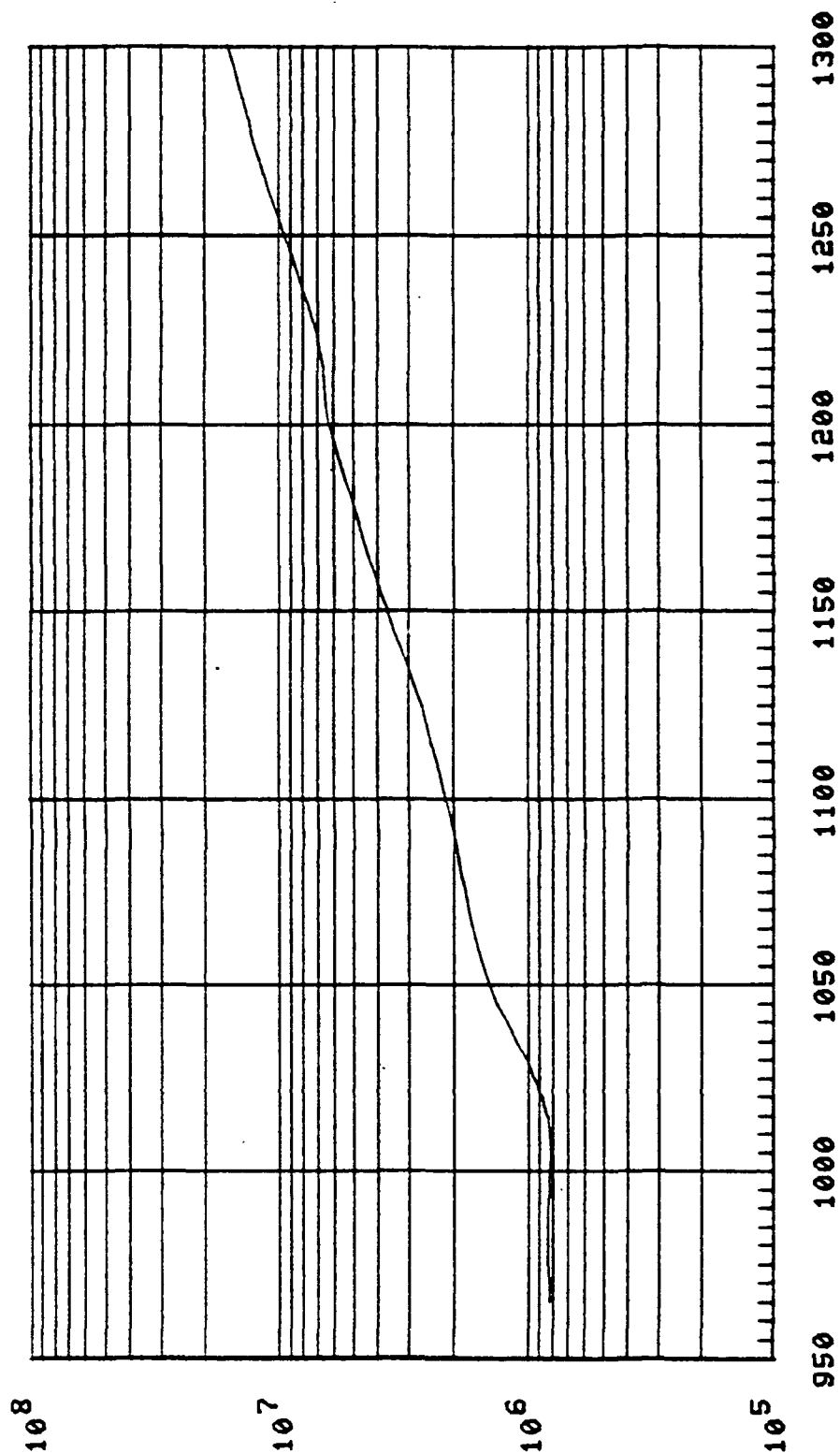


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965-1300 SEC

STS-4



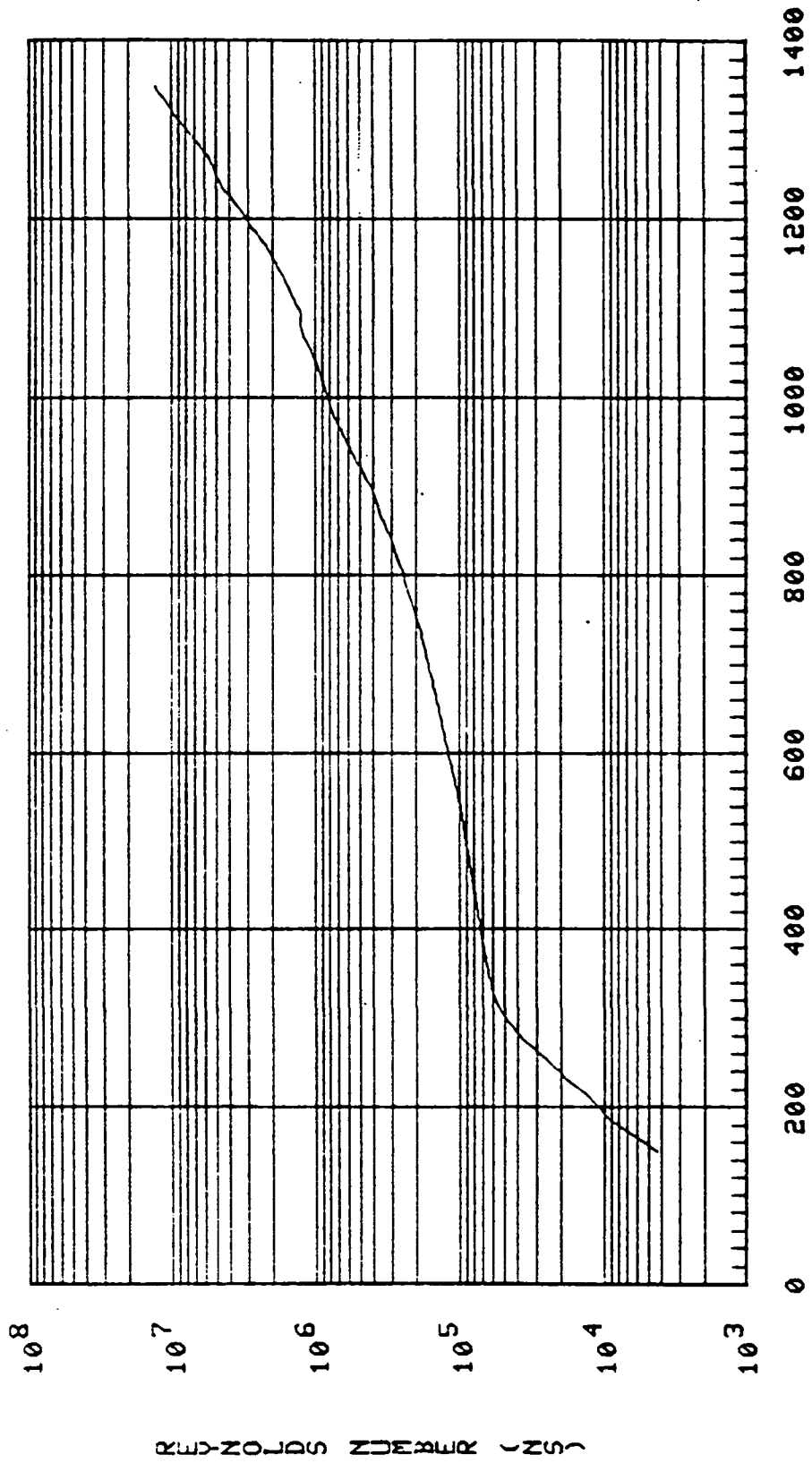
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TIME - SECONDS

REYNOLDS NUMBER (Nz)

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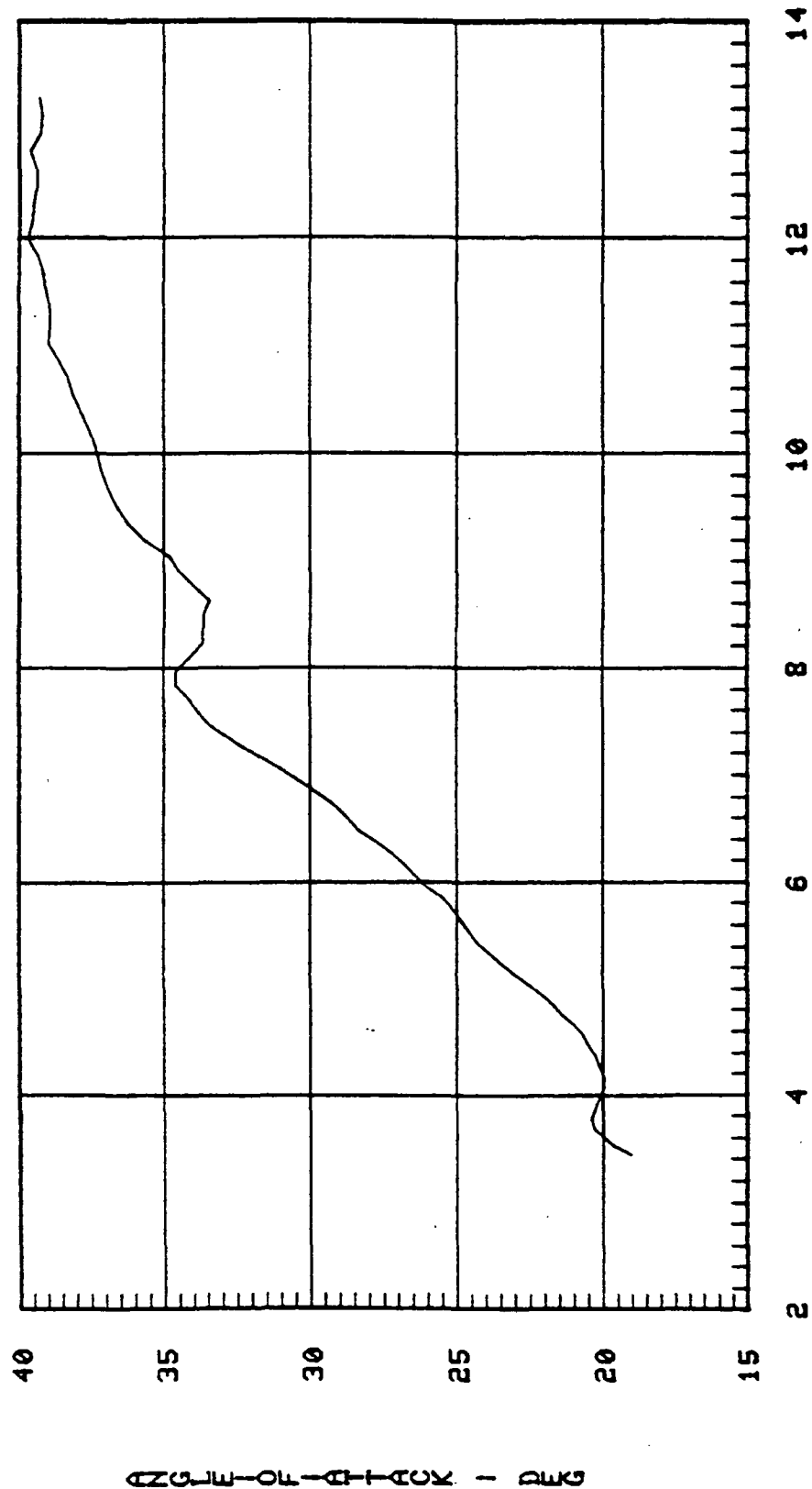
STS-5 150-1350 SEC



06/19/84  
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STS-1 1065-1460 SEC



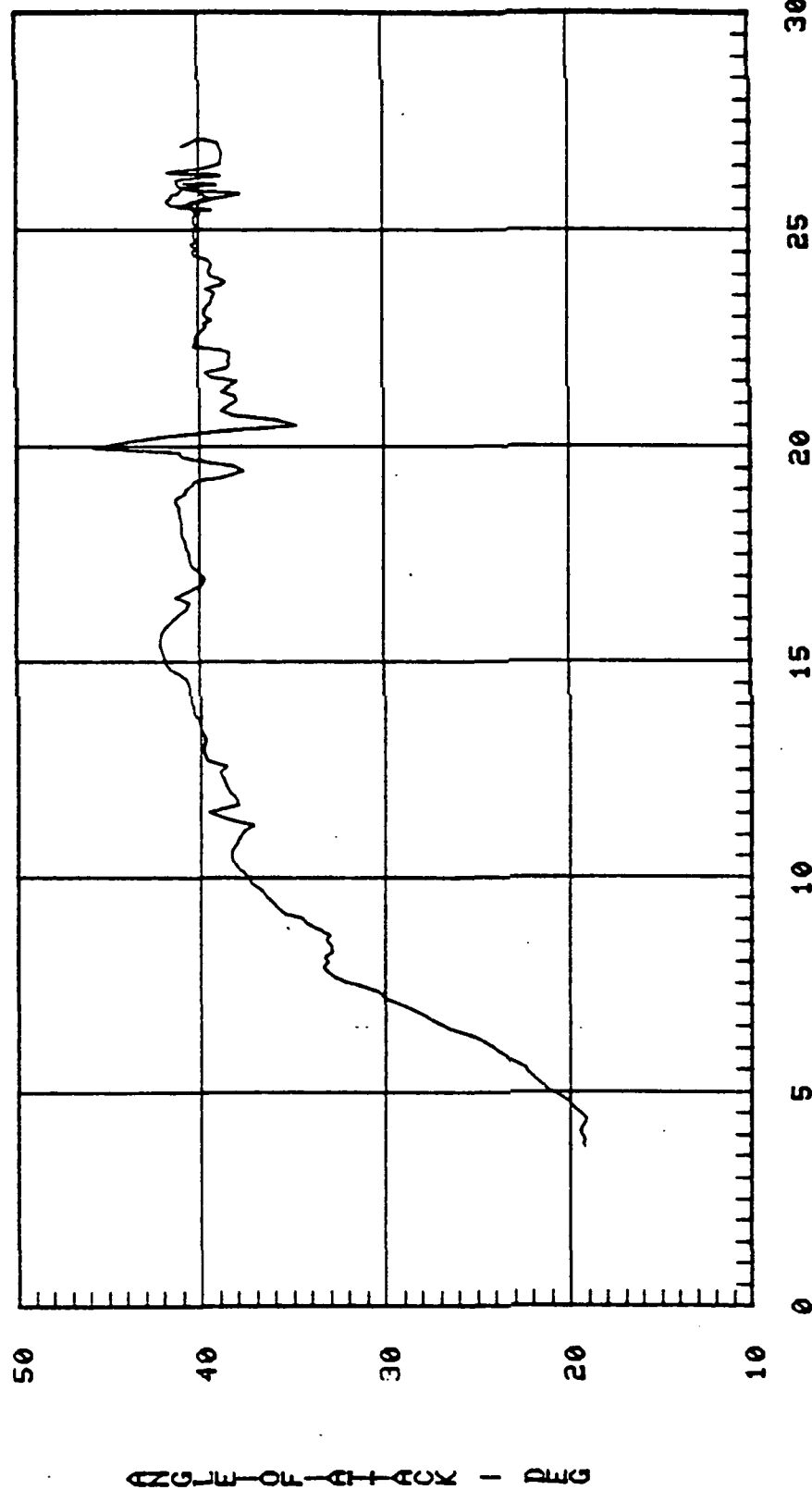
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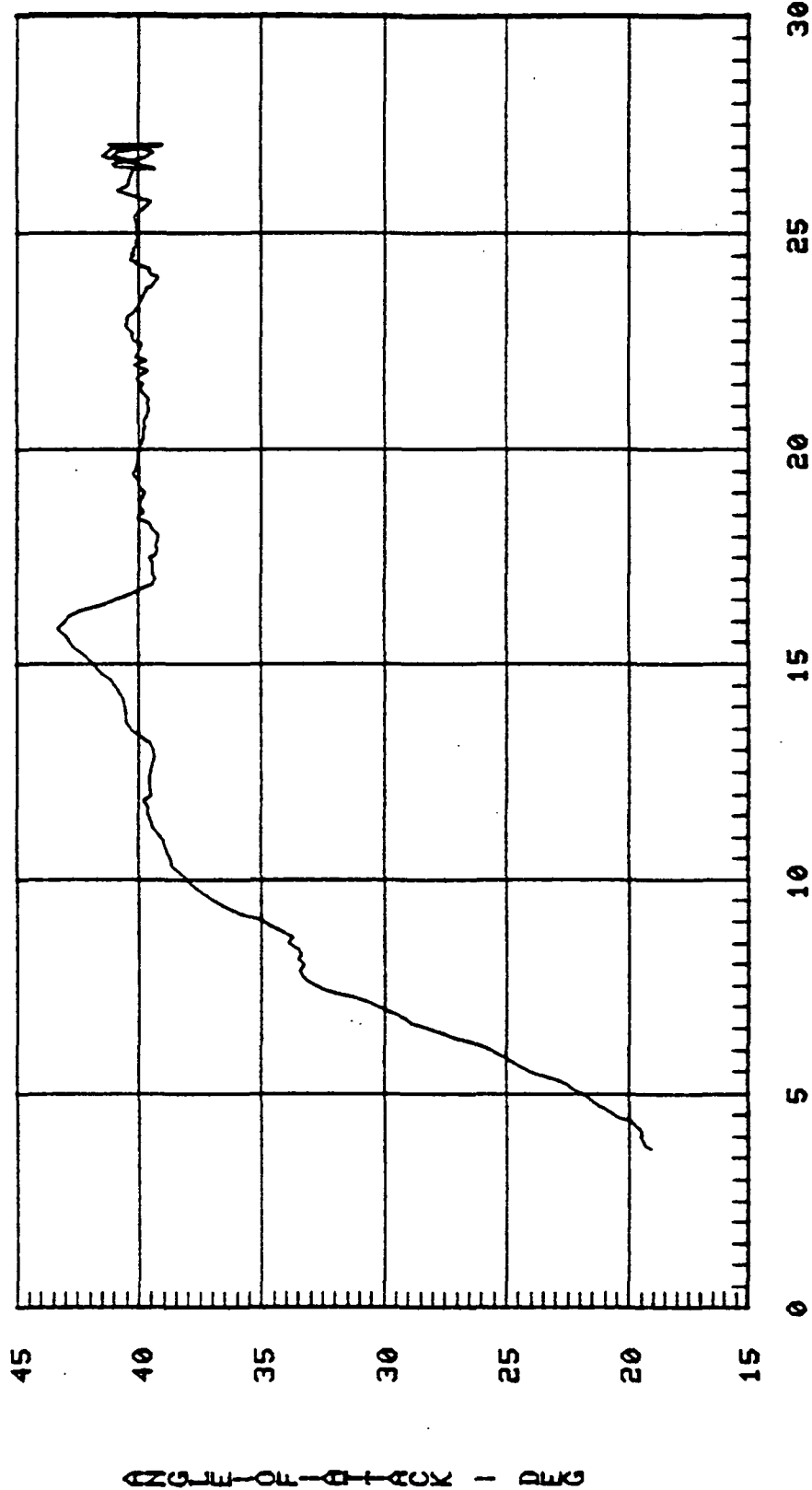
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200-1380 SEC

STS-3



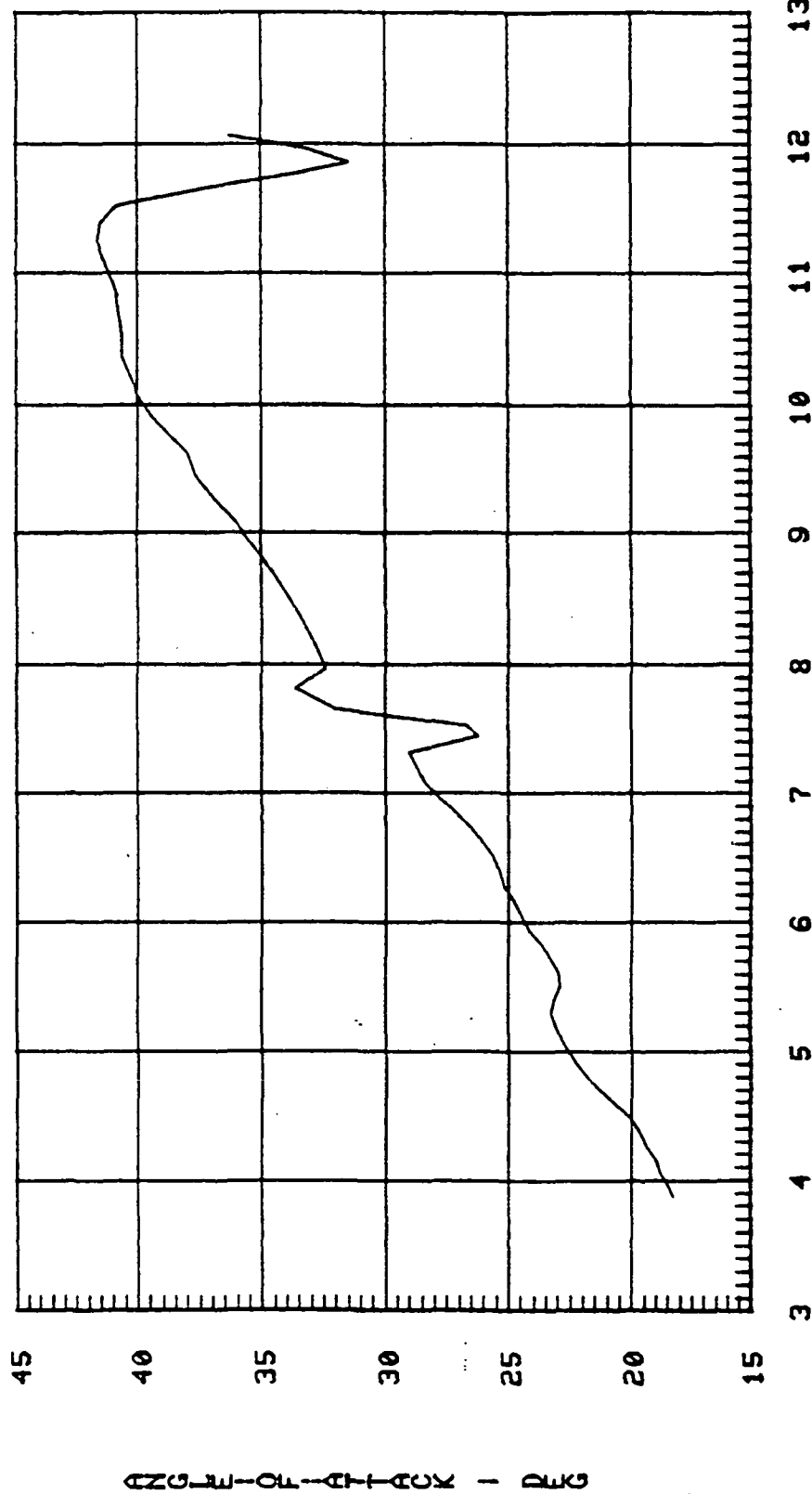
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965-1300 SEC

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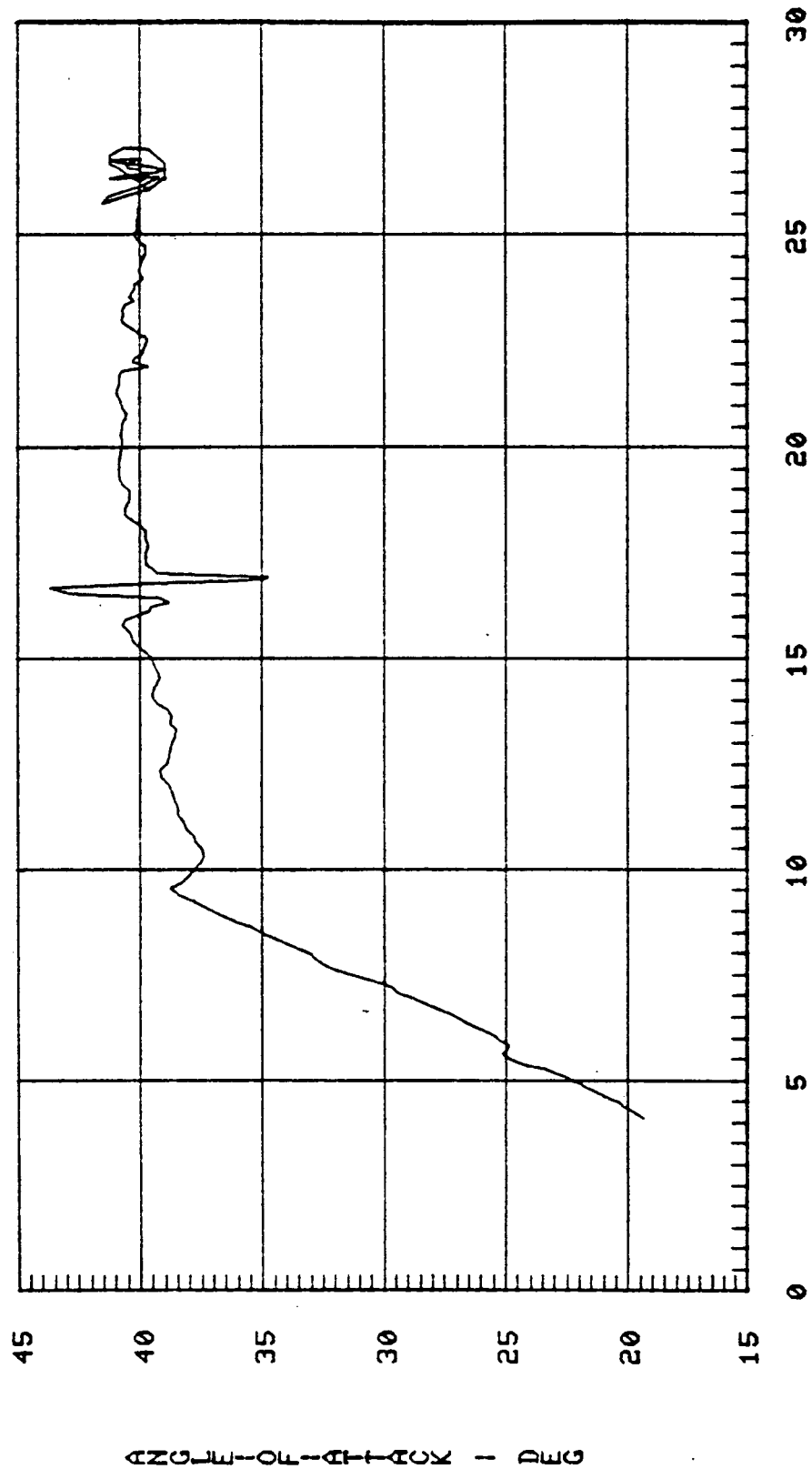
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MACH NUMBER

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STS-5 150-1350 SEC

STS-5



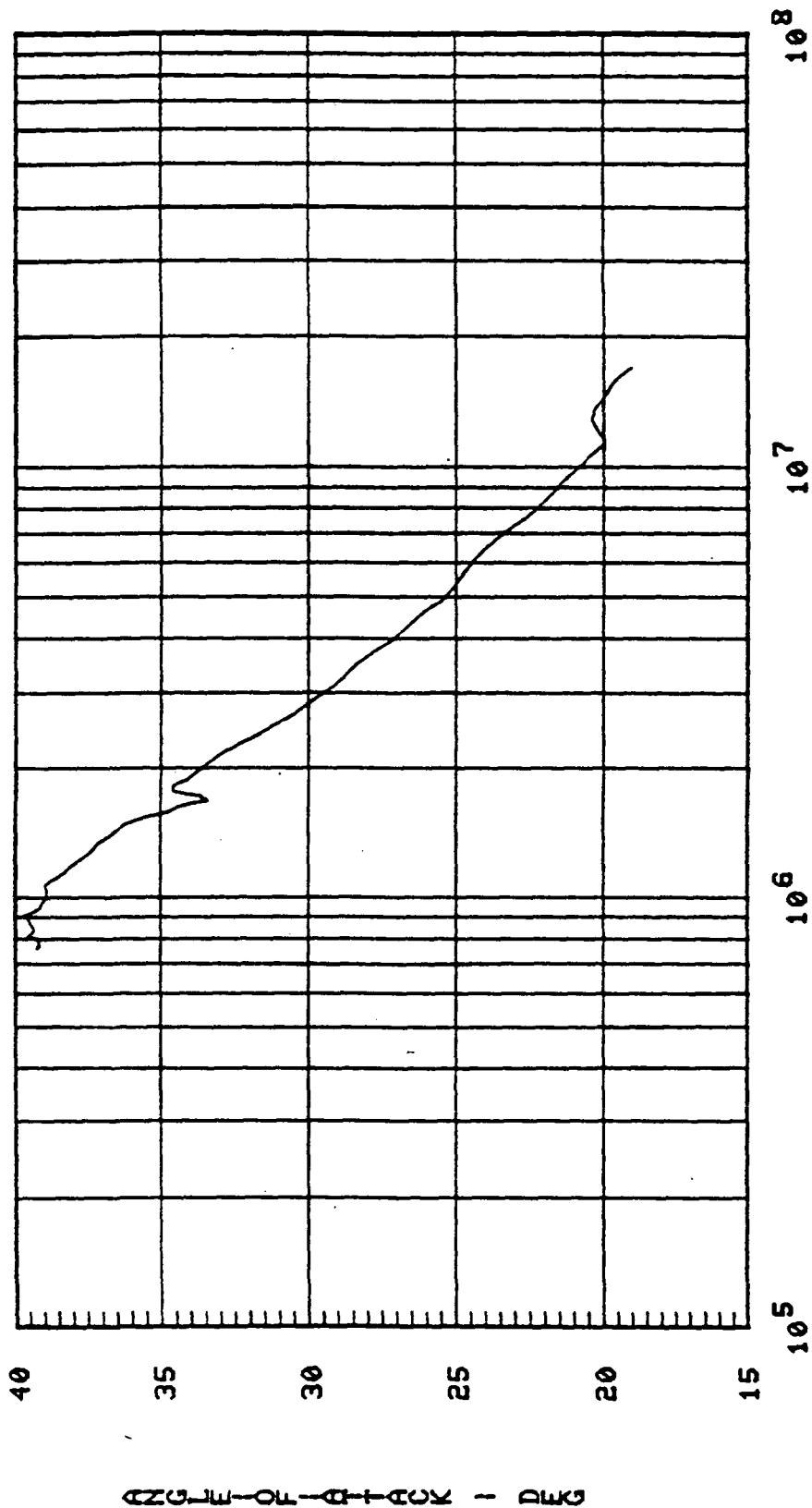
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MACH NUMBER

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1065-1460 SEC

STS-1



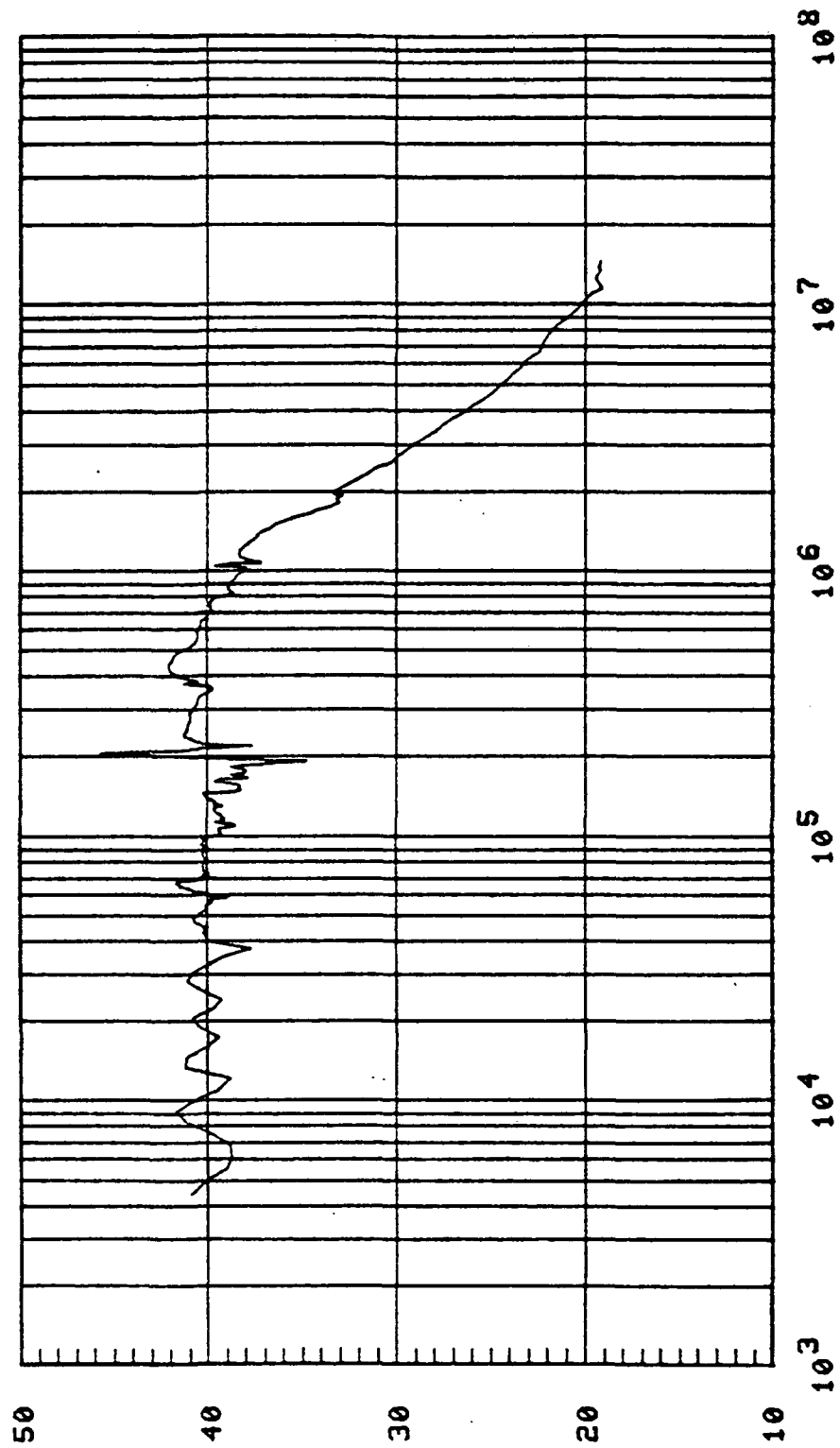
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REYNOLDS NUMBER (NS)

# STS-2 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

STS-2 200-1480 SEC

STS-2

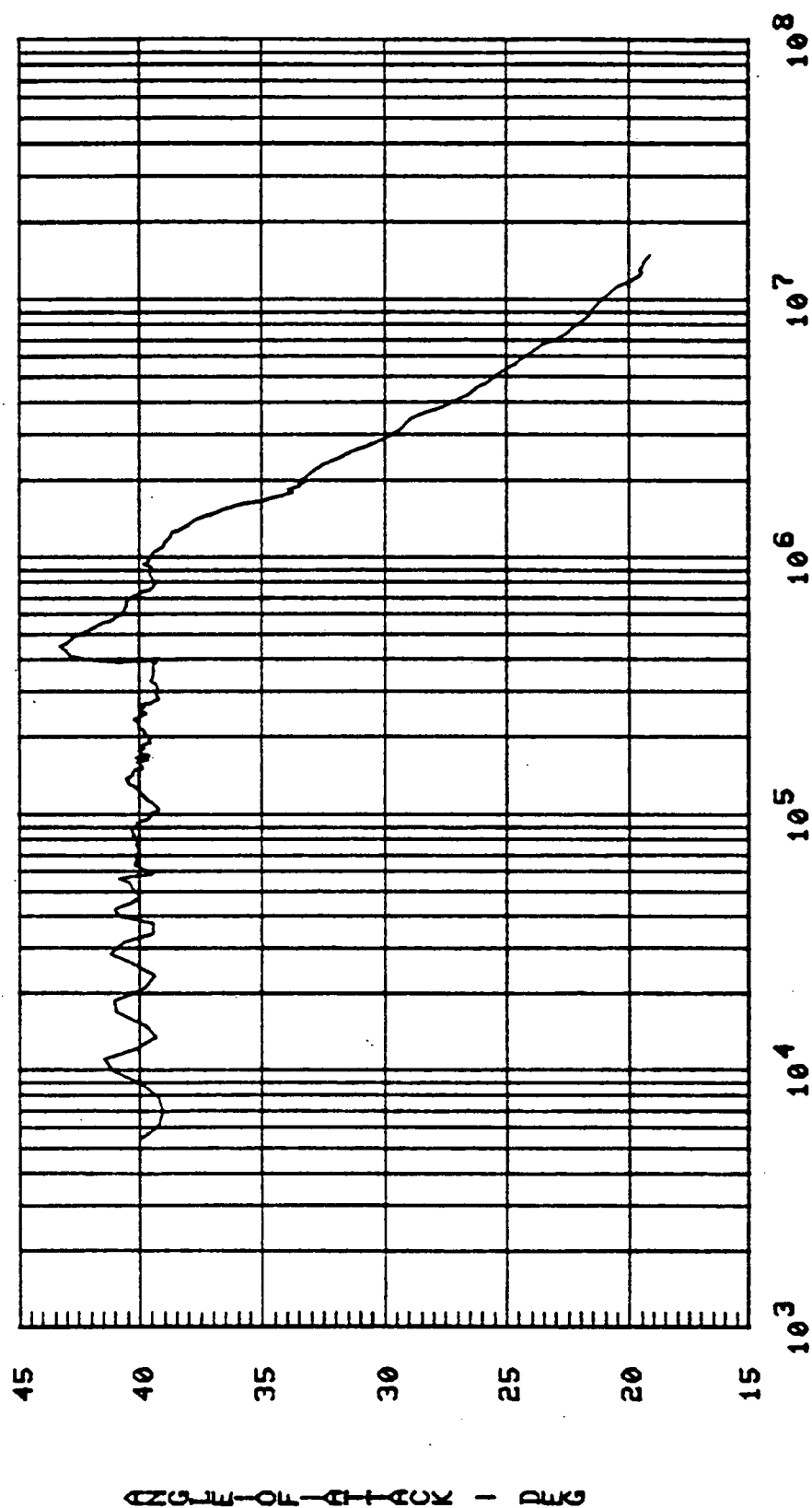


REYNOLDS NUMBER (NS) 06/18/84  
BASE TIME • 27560236.000 SEC.

# STS-3 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

200-1380 SEC

STS-3



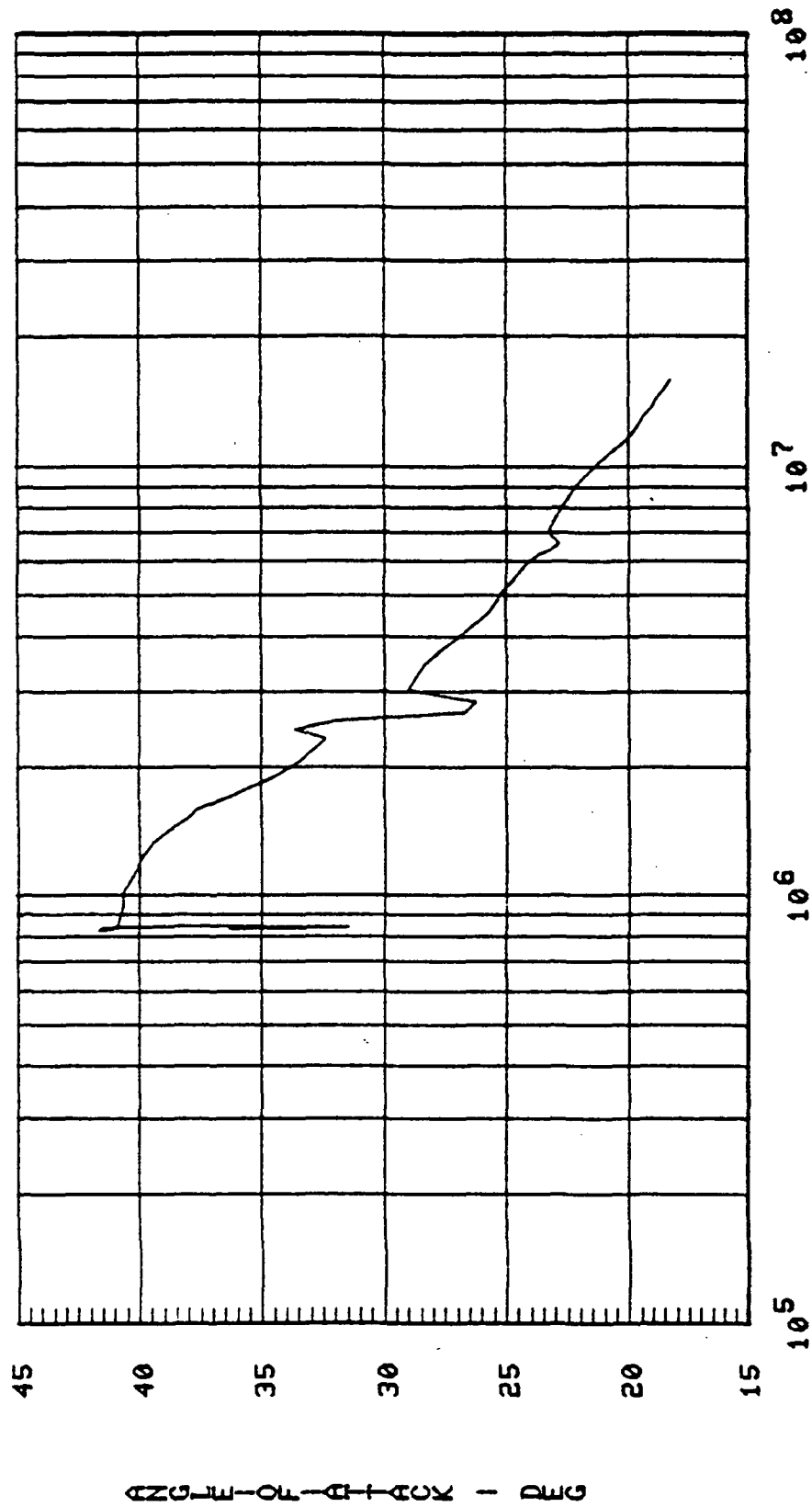
06/18/84  
BASE TIME - 07745684.000 SEC.

REYNOLDS NUMBER (NS)

# STS-4 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

965-1300 SEC

STS-4



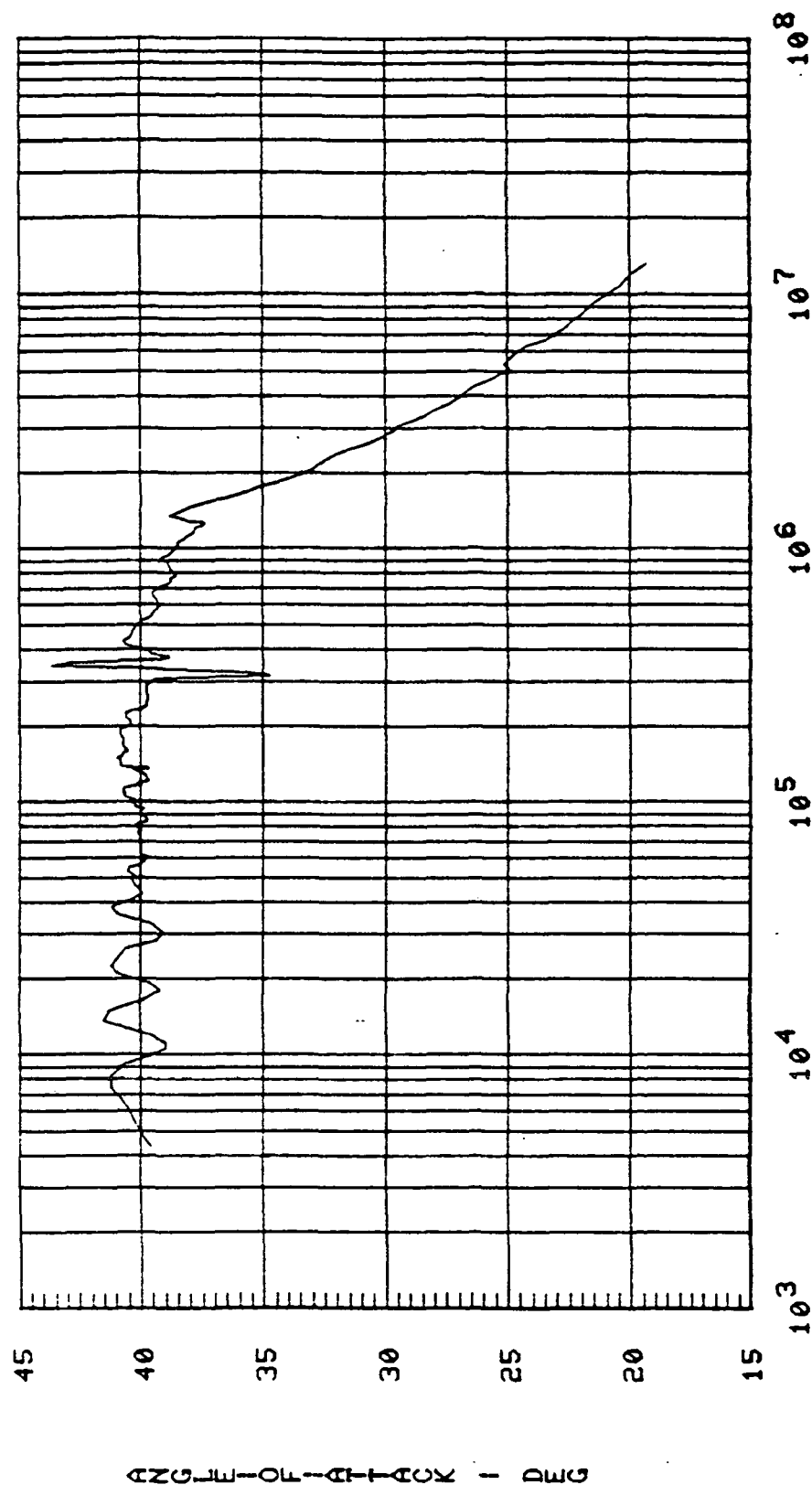
REYNOLDS NUMBER (NS) BASE TIME - 16040423.000 SEC. 06/18/84



# STS-5 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

150-1350 SEC

STS-5

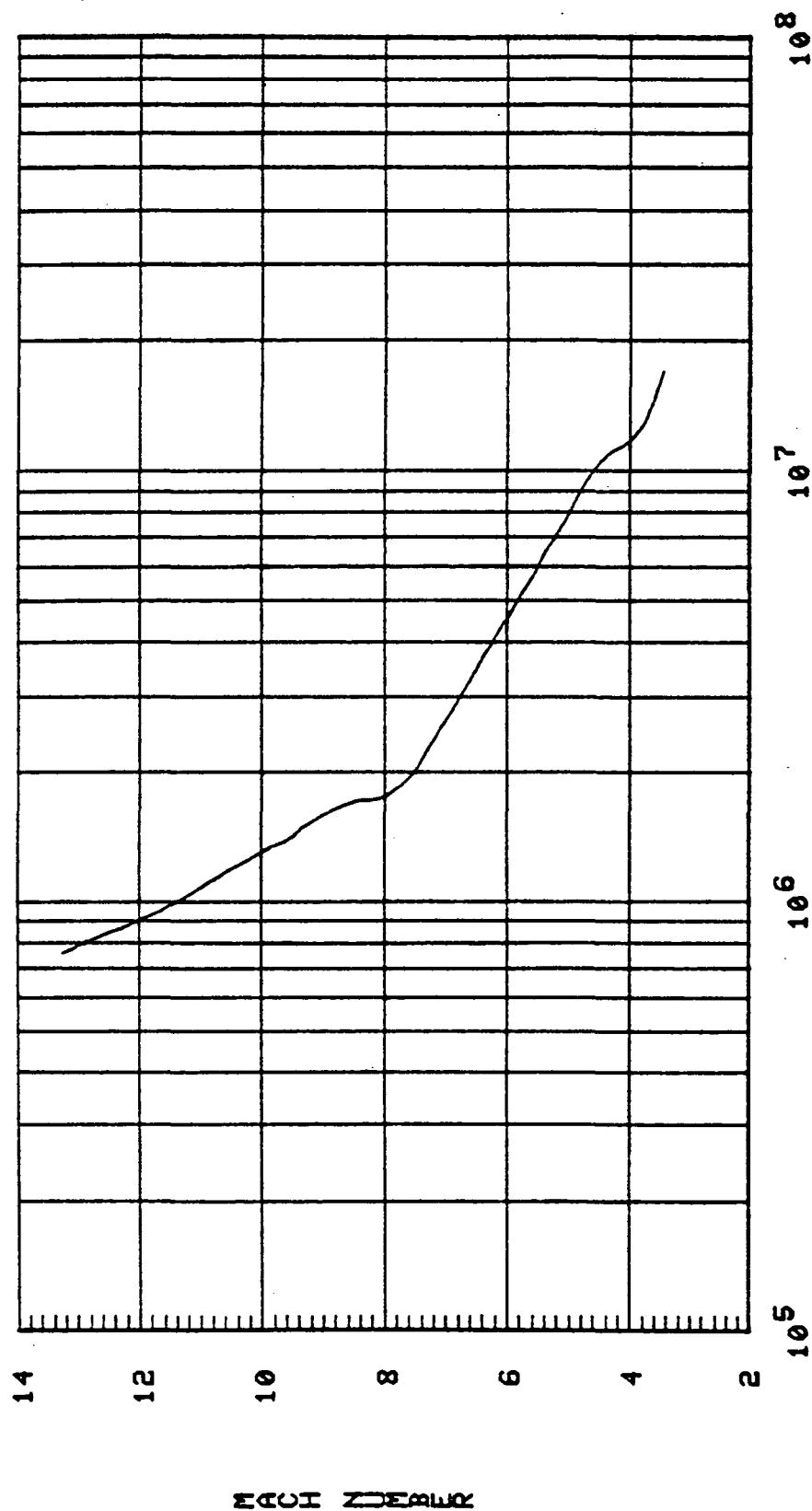


REYNOLDS NUMBER (NS) 06/19/84  
BASE TIME - 27698591.000 SEC.

# STS-1 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

1065-1460 SEC

STS-1

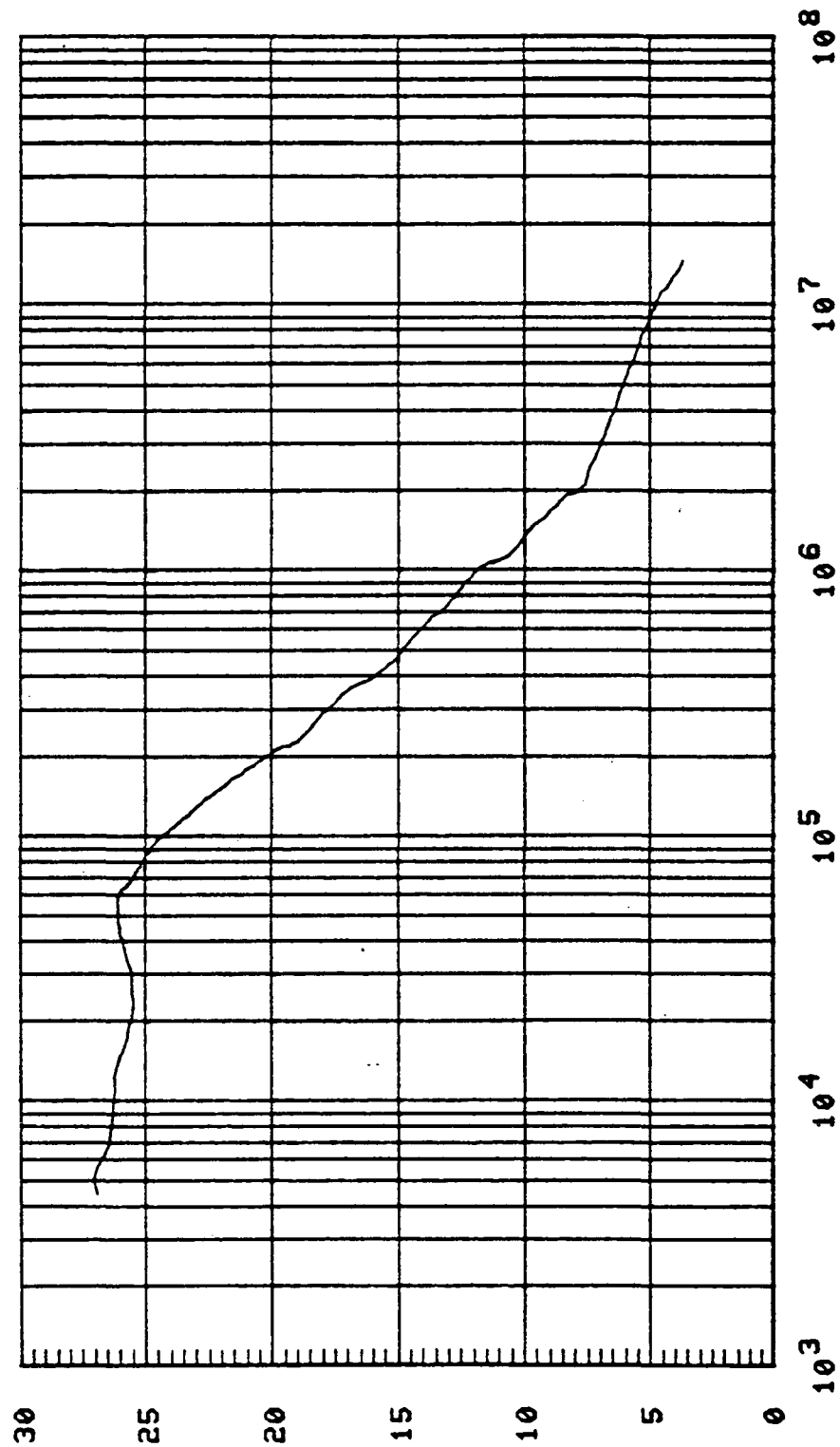


REYNOLDS NUMBER (NS) 06/18/84  
BASE TIME - 00049744.000 SEC.

# STS-2 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

200-1480 SEC

STS-2



MACH NUMBER

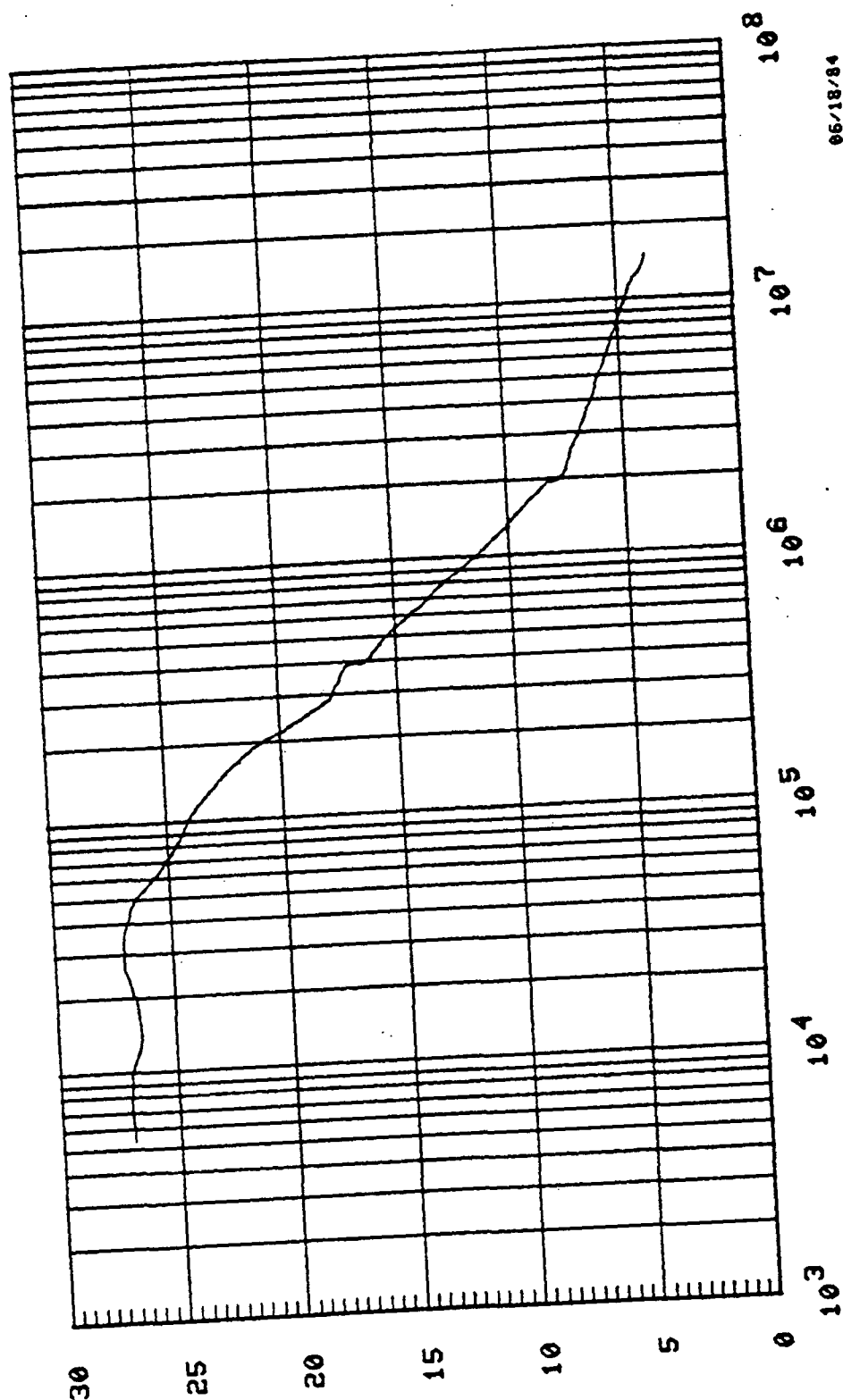
REYNOLDS NUMBER (NS)

06/18/84  
BASE TIME - 27550236.000 SEC.

# STS-3 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

200-1380 SEC

STS-3



06/18/84  
BASE TIME = 07745684.000 SEC.

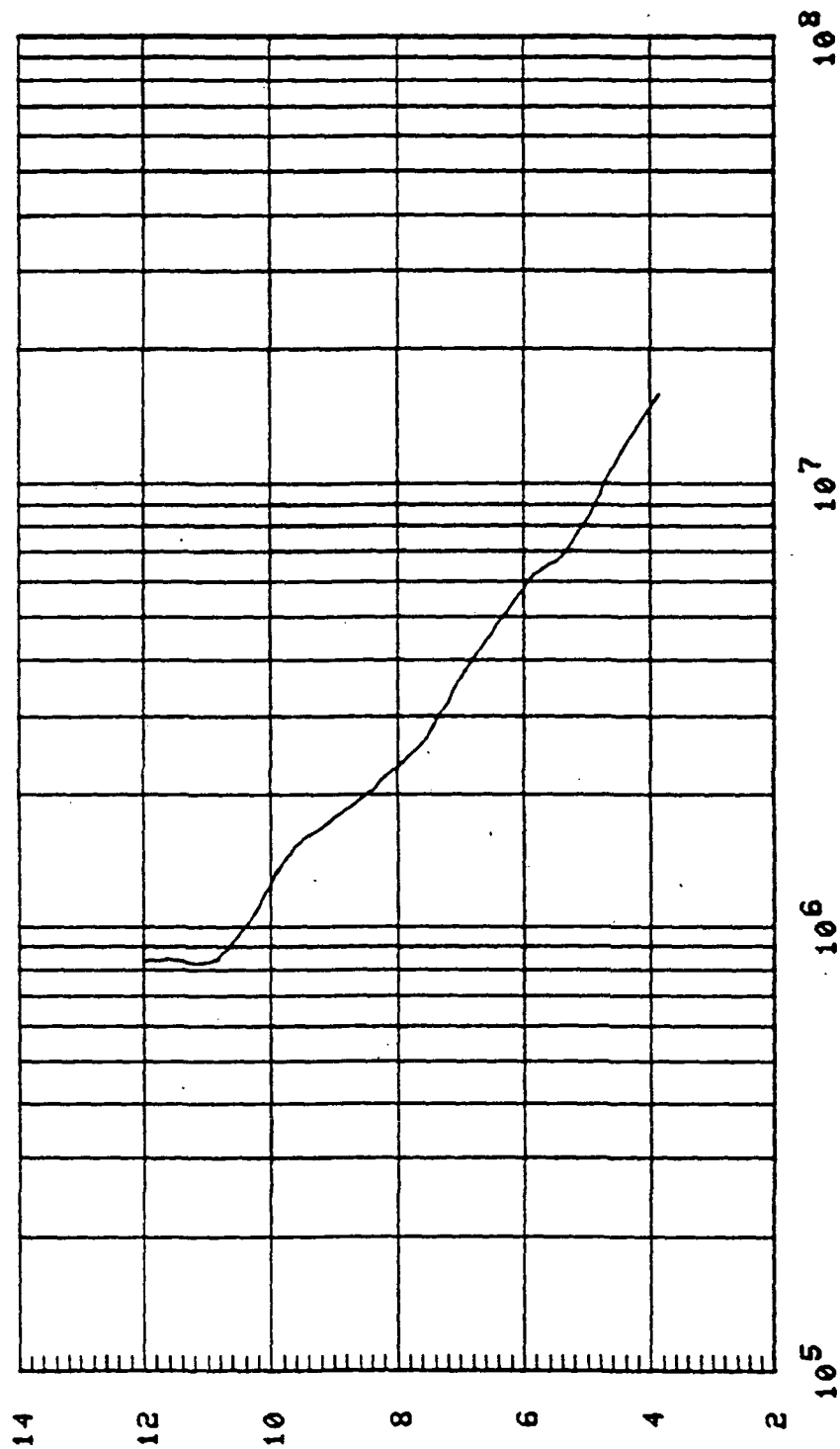
REYNOLDS NUMBER (NS)

MACH NUMBER

# STS-4 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

965-1300 SEC

STS-4



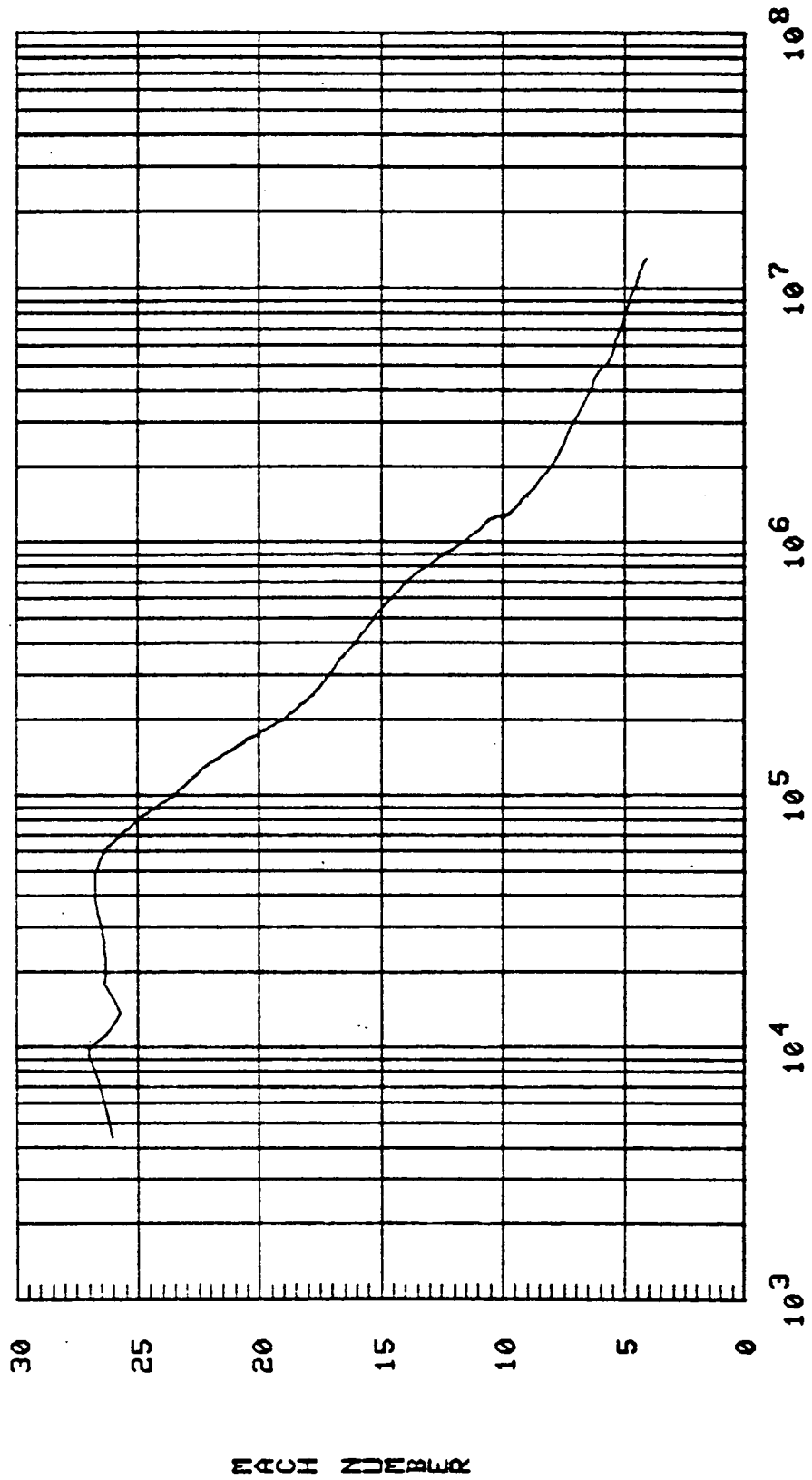
06/18/84  
BASE TIME - 16040423.000 SEC.

REYNOLDS NUMBER (NS)

ECOT ZJEMW

# STS-5 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

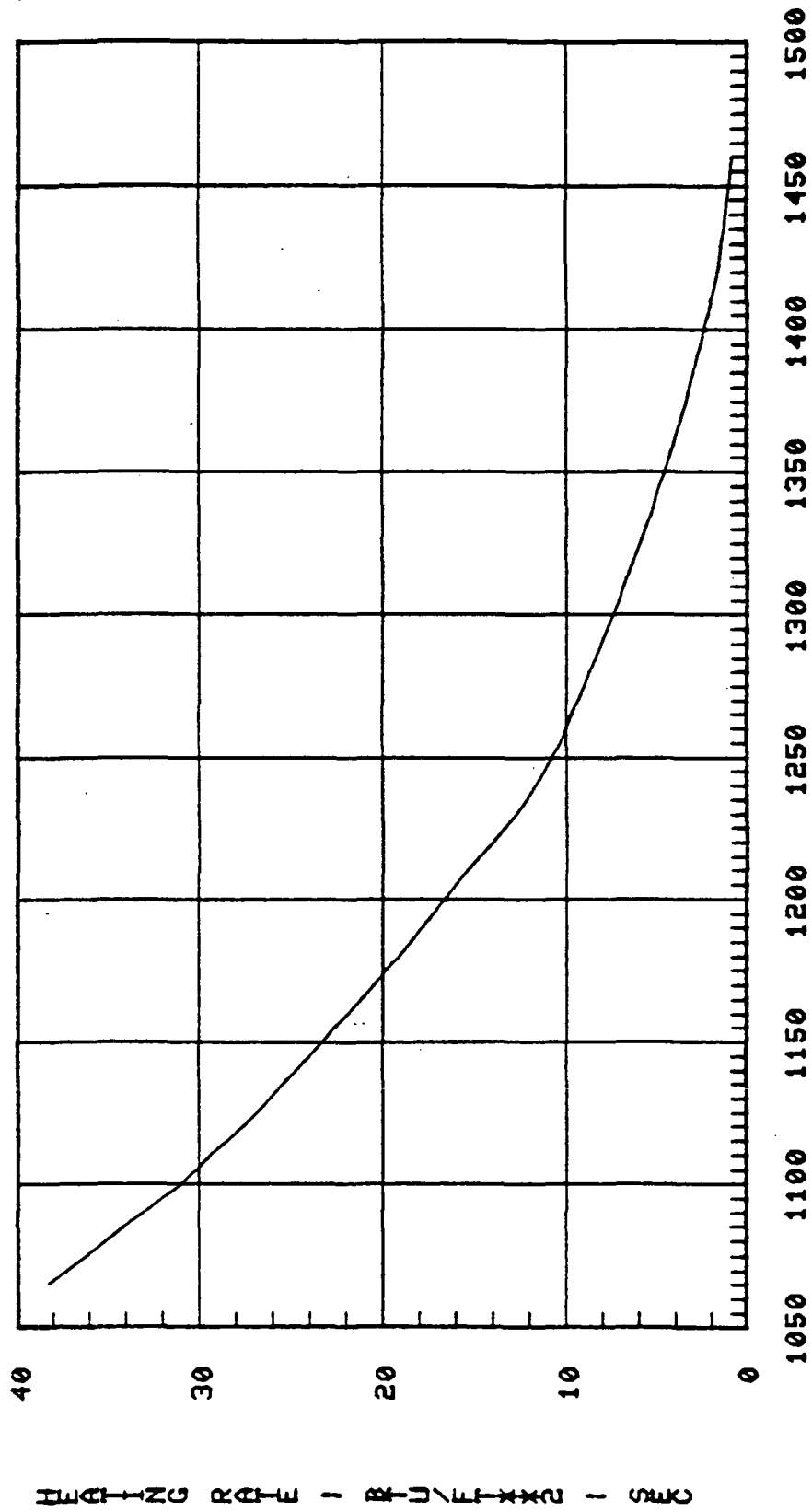
STS-5 150-1350 SEC



REYNOLDS NUMBER (NS) 06/19/84  
BASE TIME - 27698591.000 SEC.

# STS-1 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

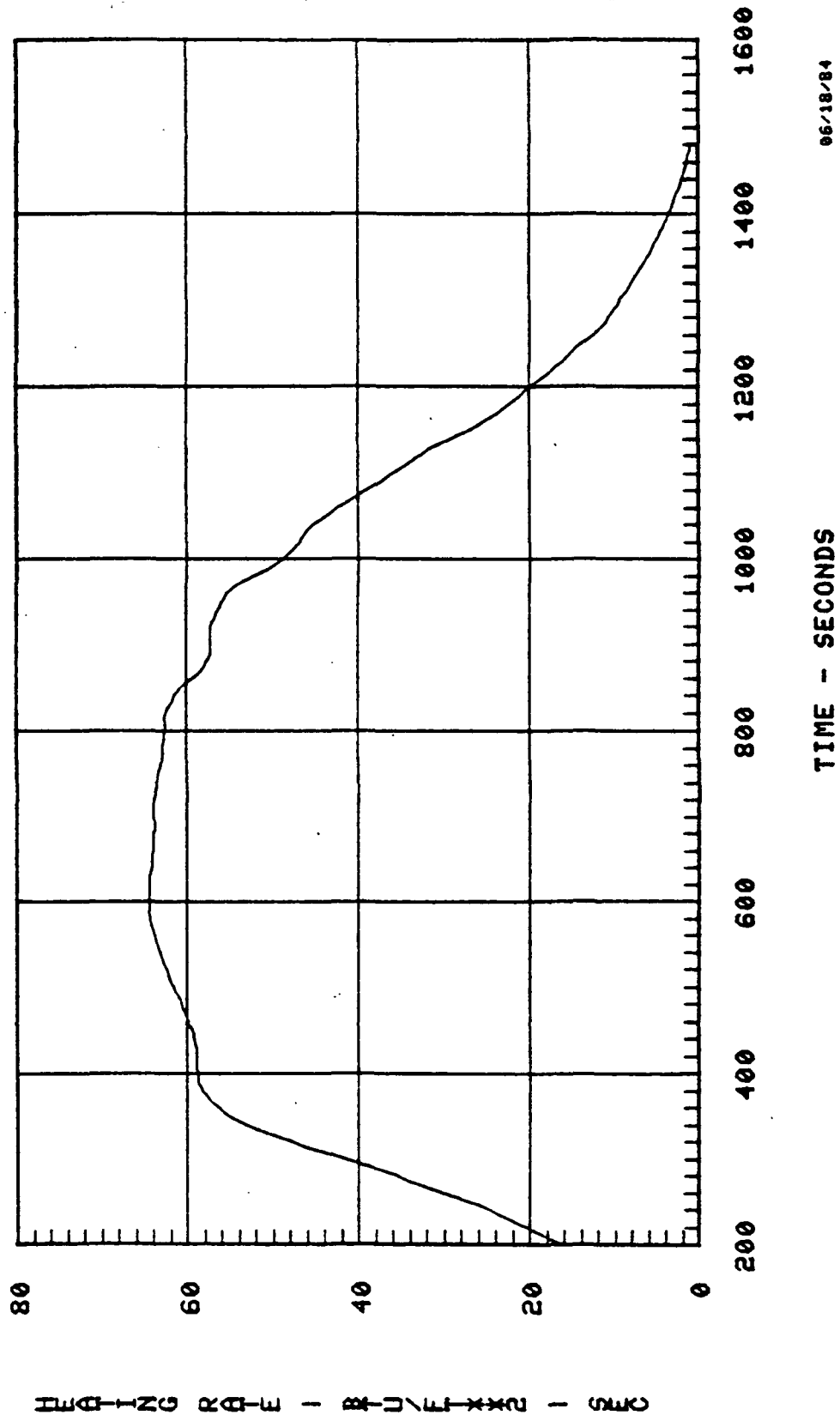
QREF



06/18/84

# STS-2 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

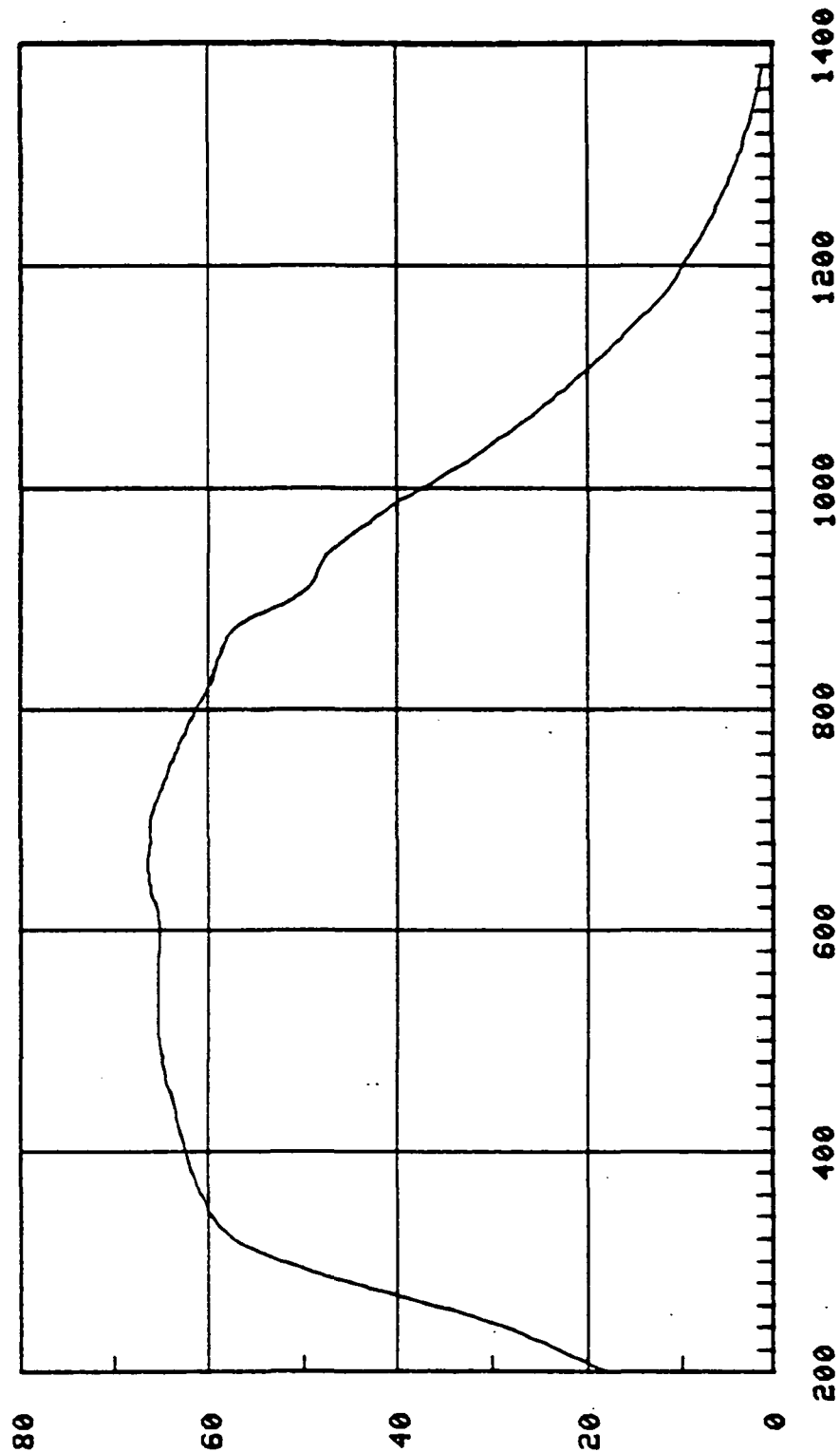
QREF





# STS-3 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ GREF



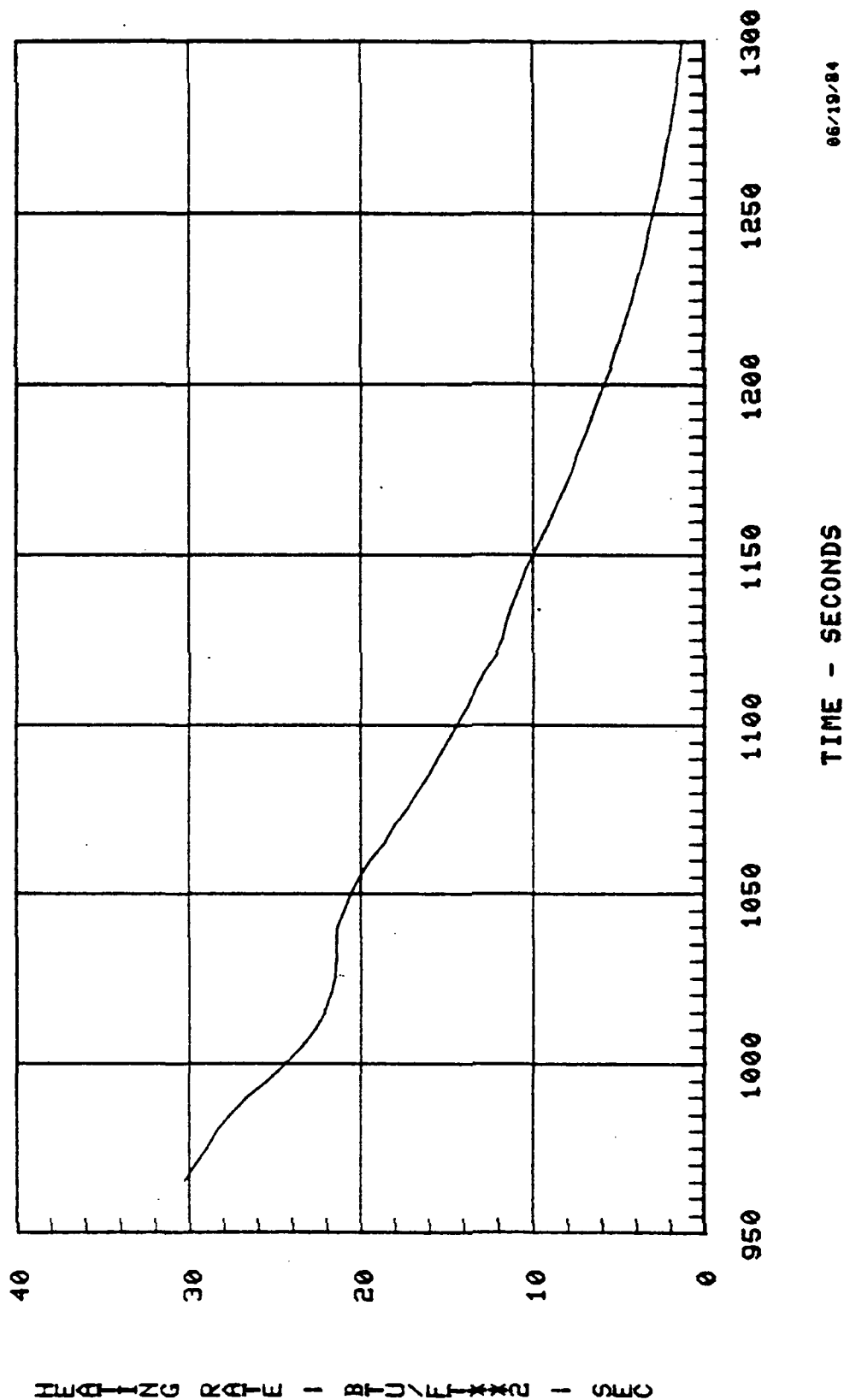
TIME - SECONDS

06/18/84

HEIGHT RATE - FEET/SEC - SEC

# STS-4 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ OREF

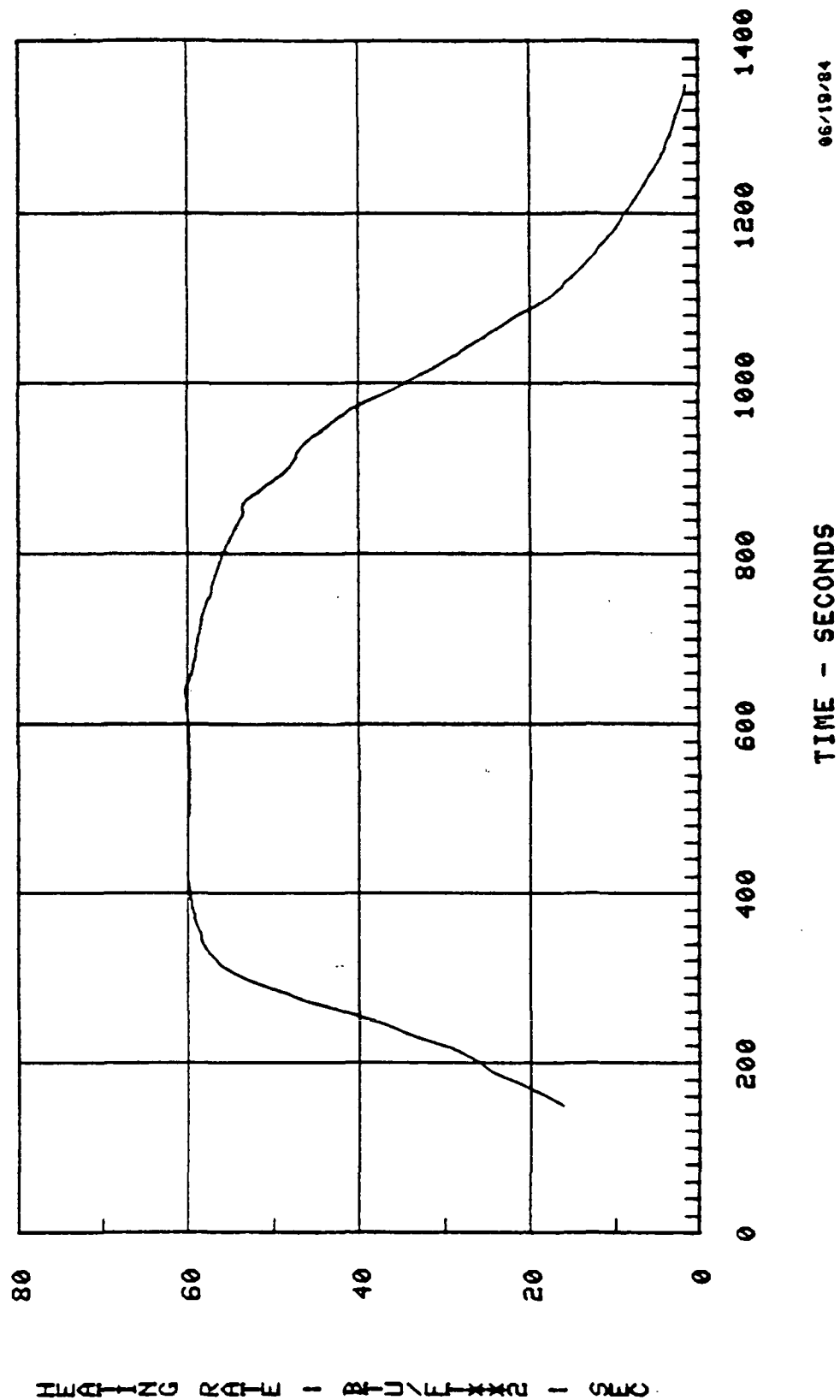


06/19/84

FUELING RATE - POUNDS/SECONDS - SEC

# STS-5 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

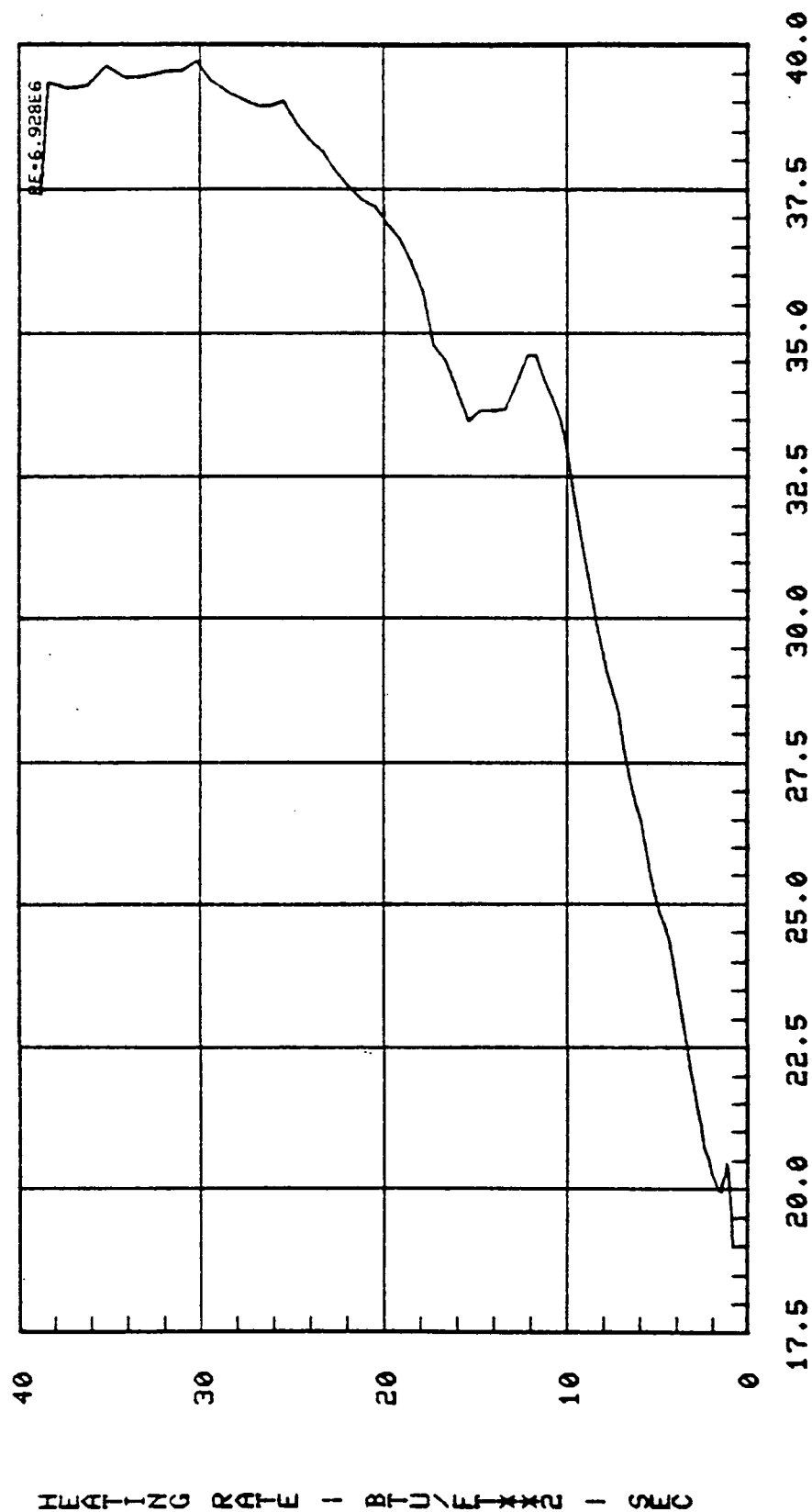
REF



# STS-1 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

1005-1450 SEC

REF

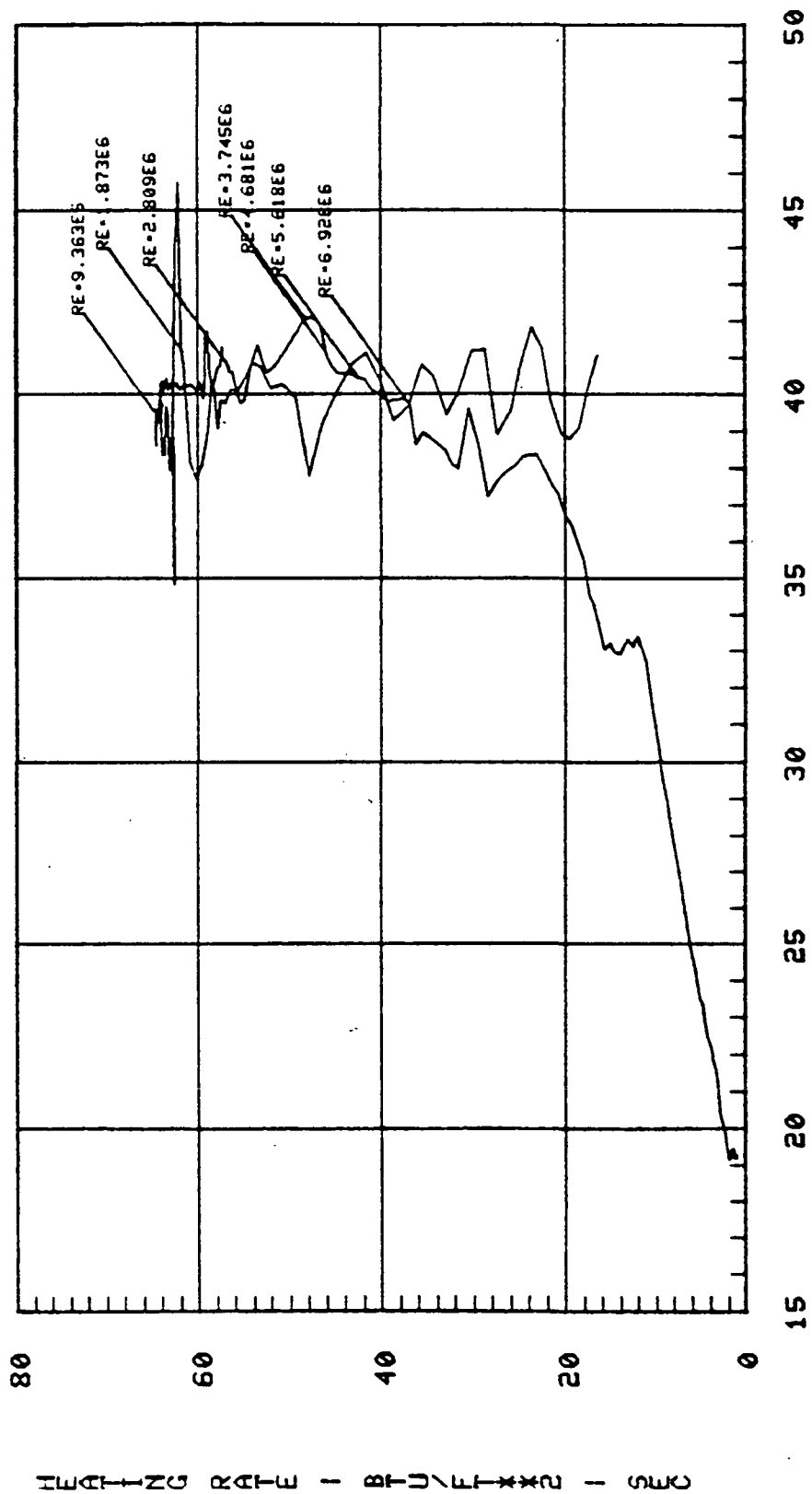


06/18/84  
BASE TIME - 09043744.000 SEC.

# STS-2 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

200-1420 SEC

REF

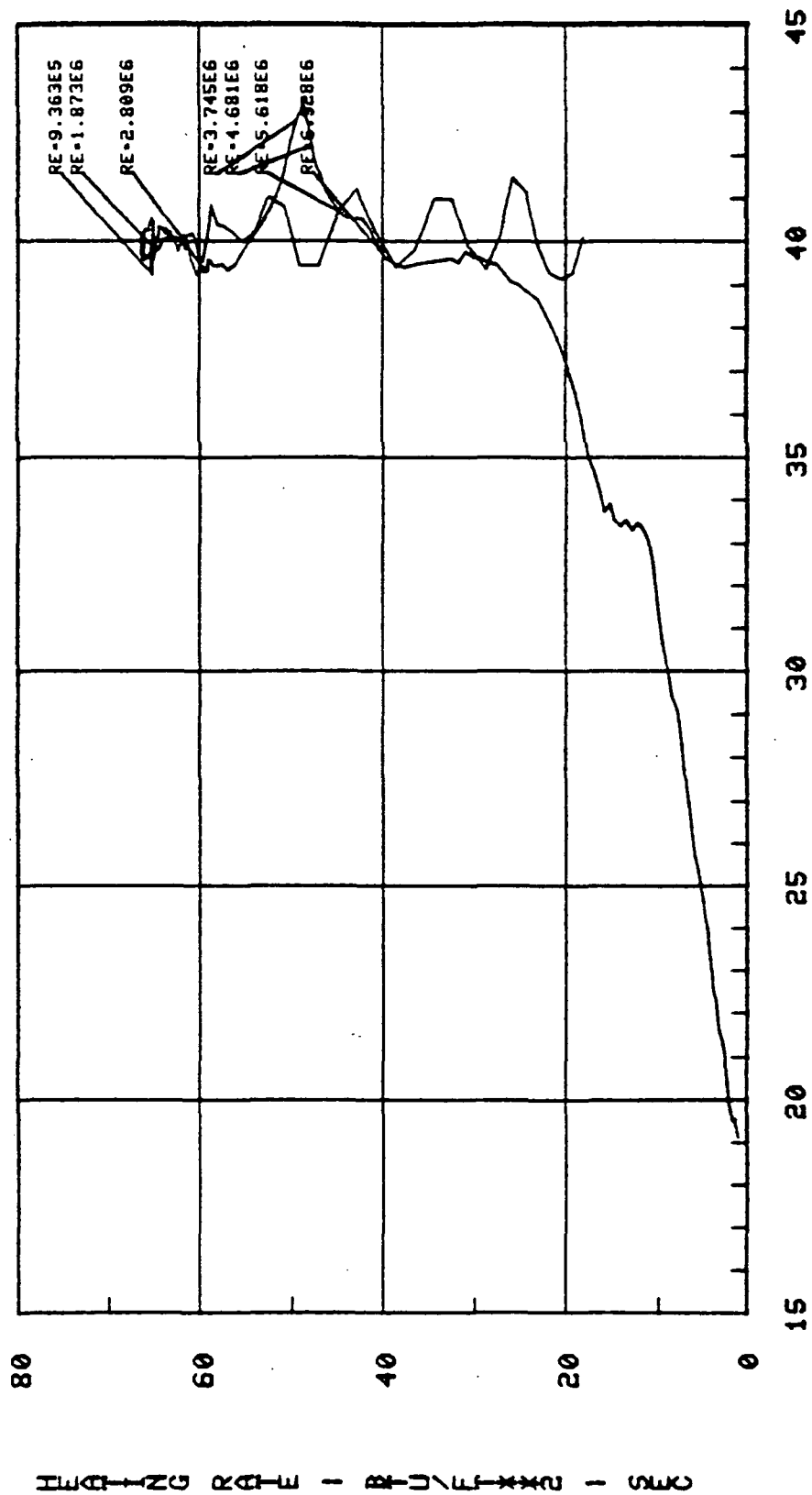


06/18/84  
BASE TIME - 27550236.000 SEC.

# STS-3 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

200-1380 SEC

QREF

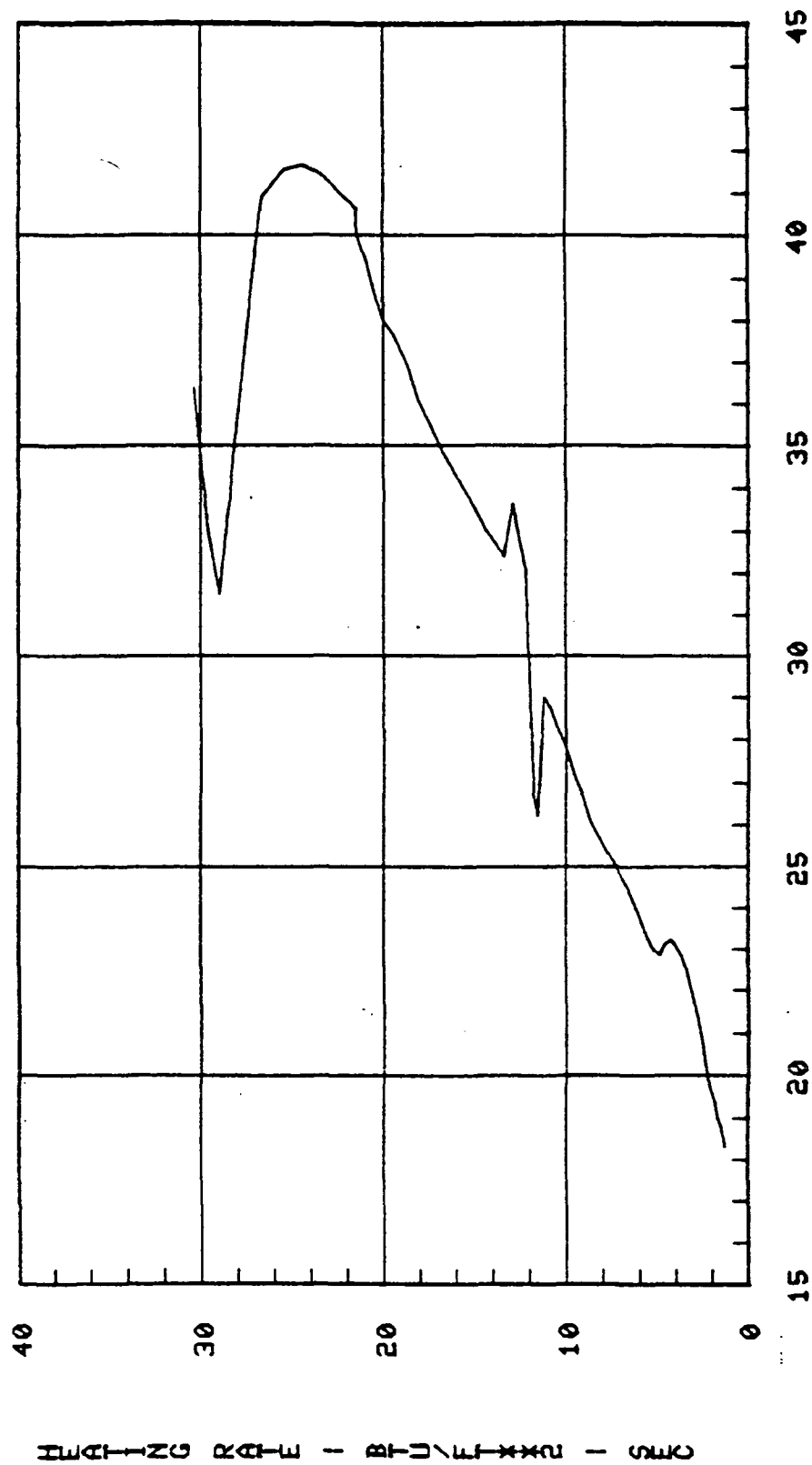


06/18/84  
BASE TIME - 07745684.000 SEC.

# STS-4 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

965-1300 SEC

QREF

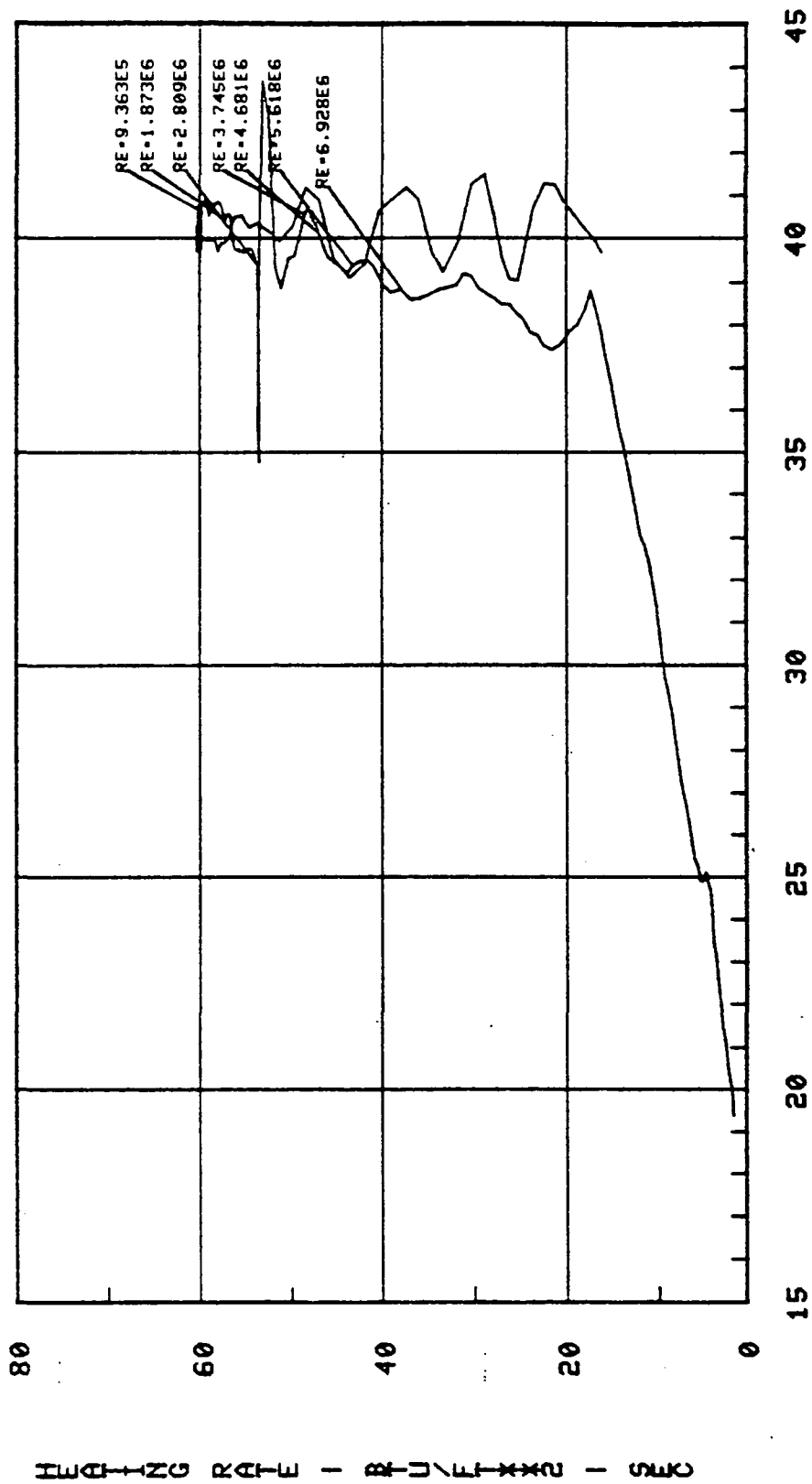


06/19/84  
BASE TIME • 16040423.000 SEC.

# STS-5 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

150-1350 SEC

OREF



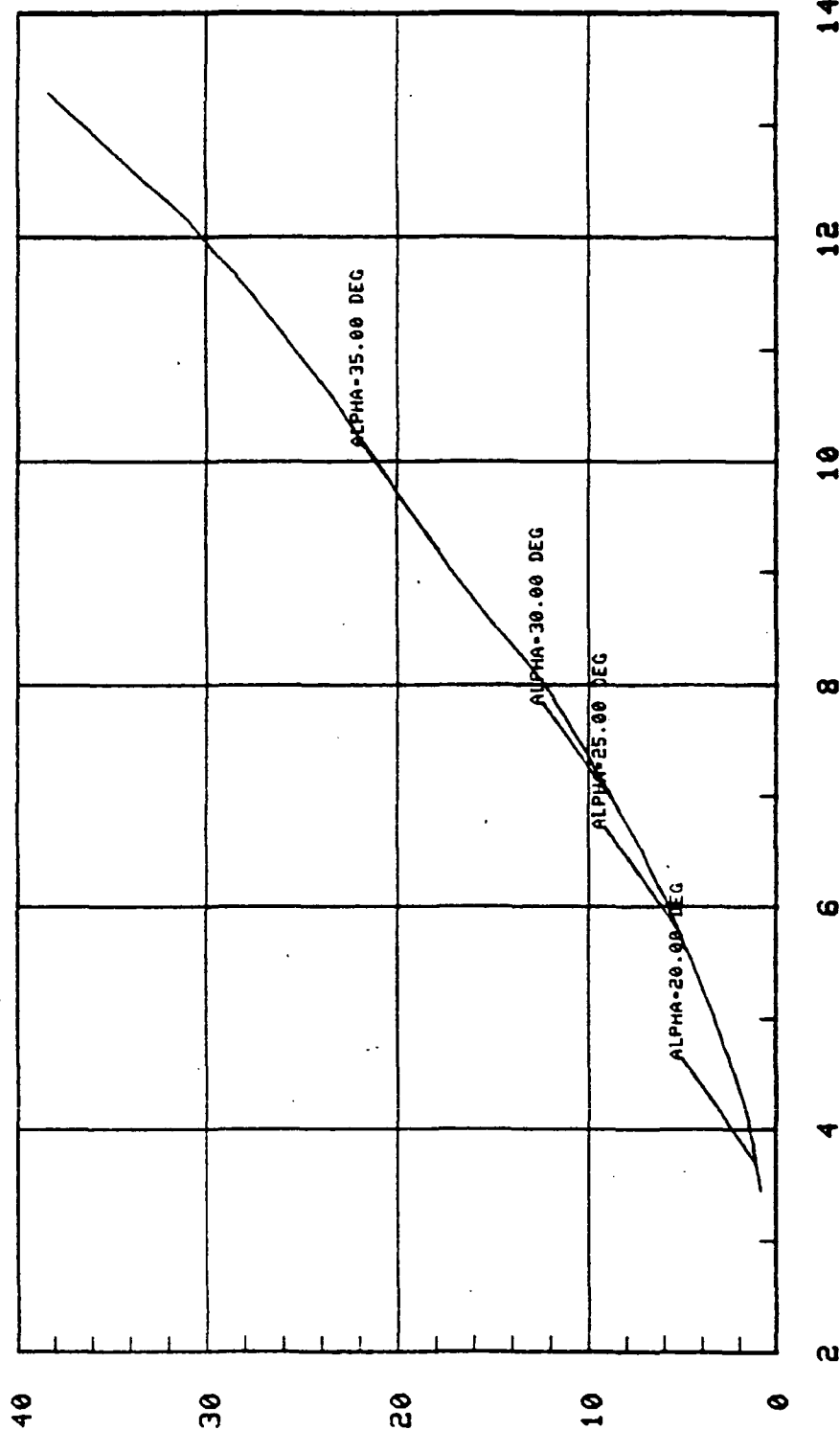
06/19/84  
BASE TIME - 27698591.000 SEC.  
ANGLE-OF-ATTACK - DEG



# STS-1 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

1365-1460 SEC

UREF



06/18/84  
BASE TIME - 09045744.000 SEC.

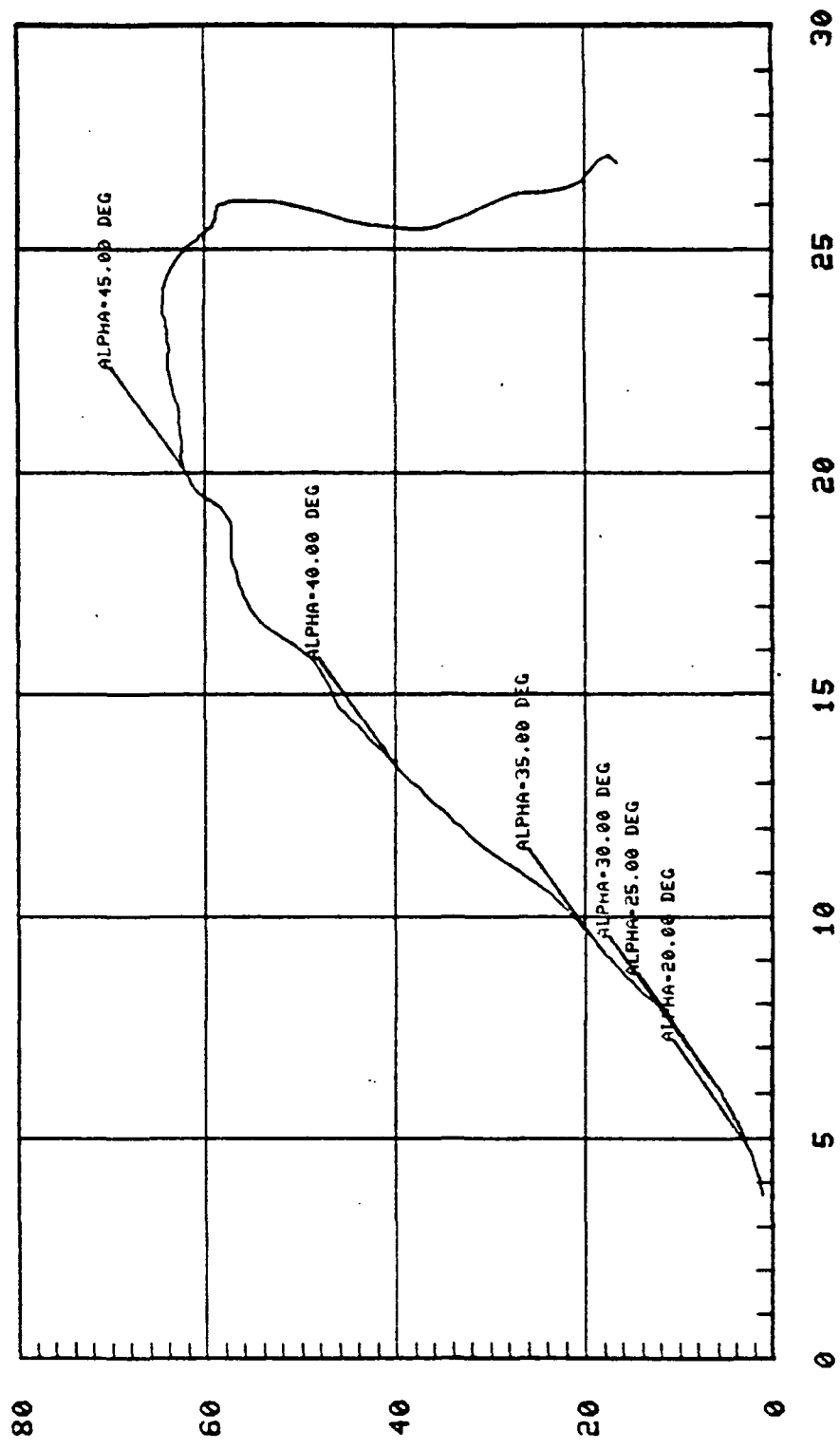
MACH NUMBER

HEATING RATE - BTU/FT<sup>2</sup> SEC

# STS-2 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

200-1480 SEC

QREF



06/18/84  
BASE TIME - 27550236.000 SEC.

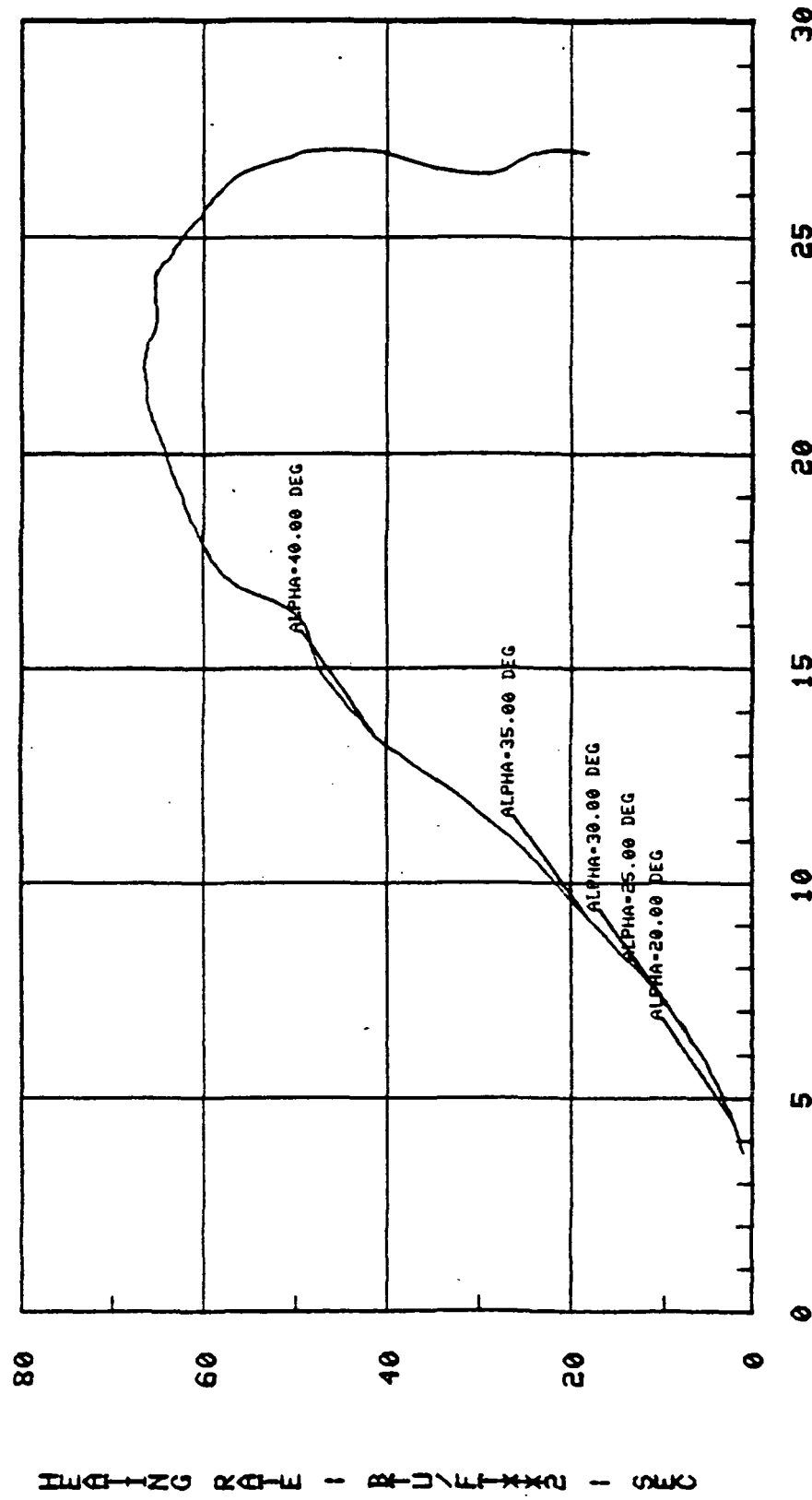
MACH NUMBER

HEATING RATE - BTU/FT²-SEC

# STS-3 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

200-1380 SEC

REF



06/18/84  
BASE TIME - 07745684.000 SEC.

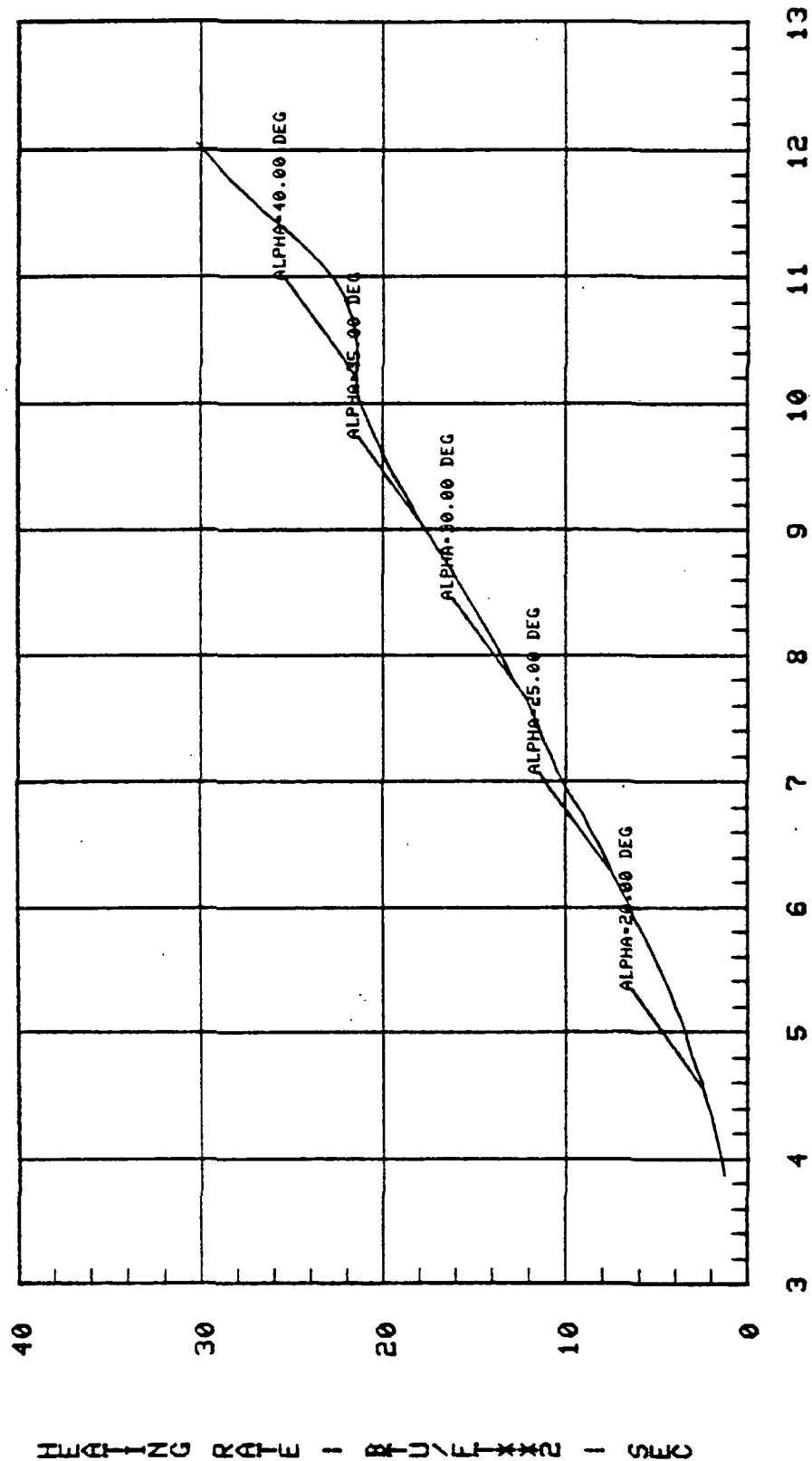
MACH NUMBER

HEATING RATE - Btu/ft²-sec

# STS-4 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

965-1300 SEC

OREF



06/19/84  
BASE TIME - 16040423.000 SEC.

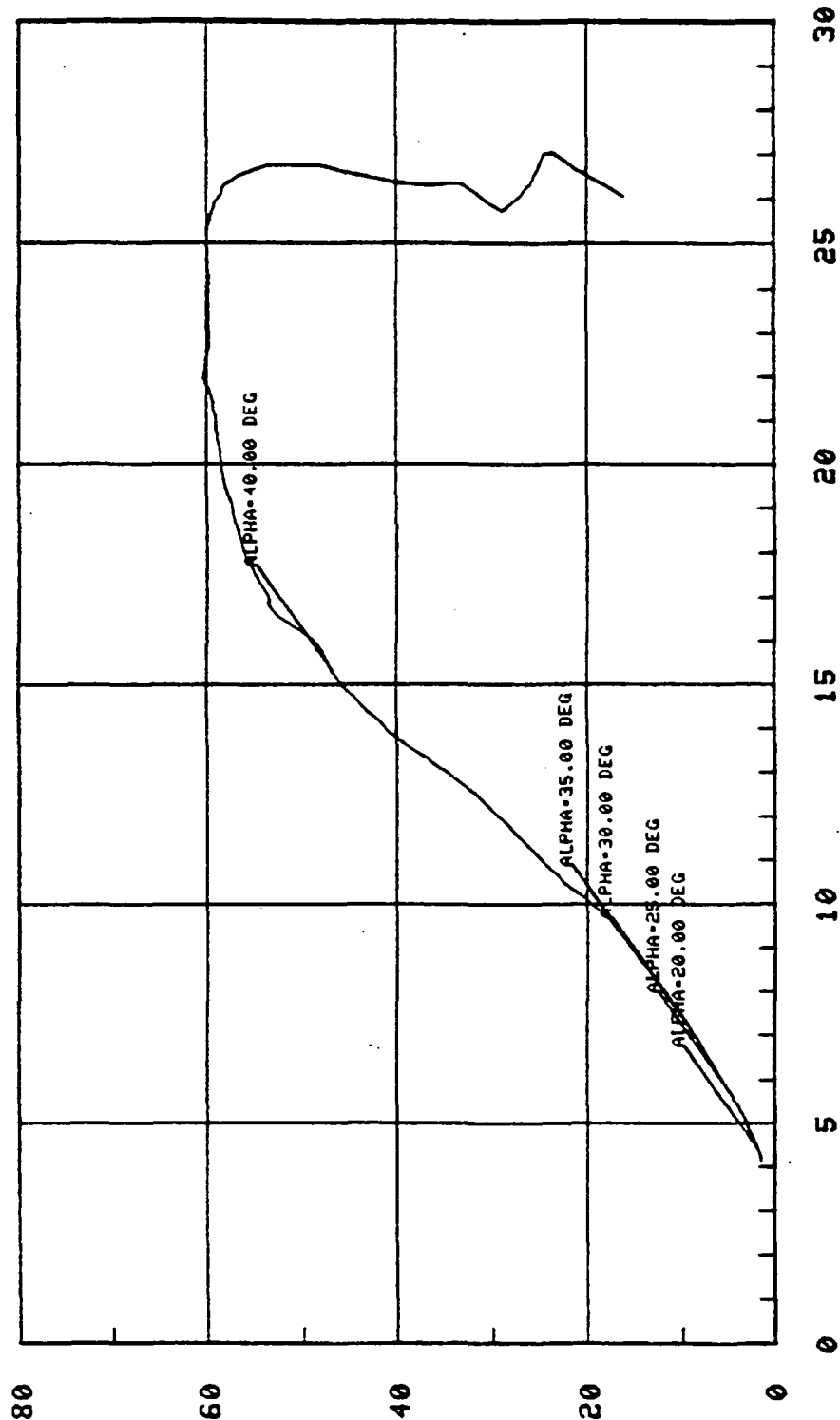
MACH NUMBER

HEATING RATE - Btu/ft²-sec

# STS-5 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

150-1350 SEC

REF



06/19/84  
BASE TIME - 27698501.000 SEC.

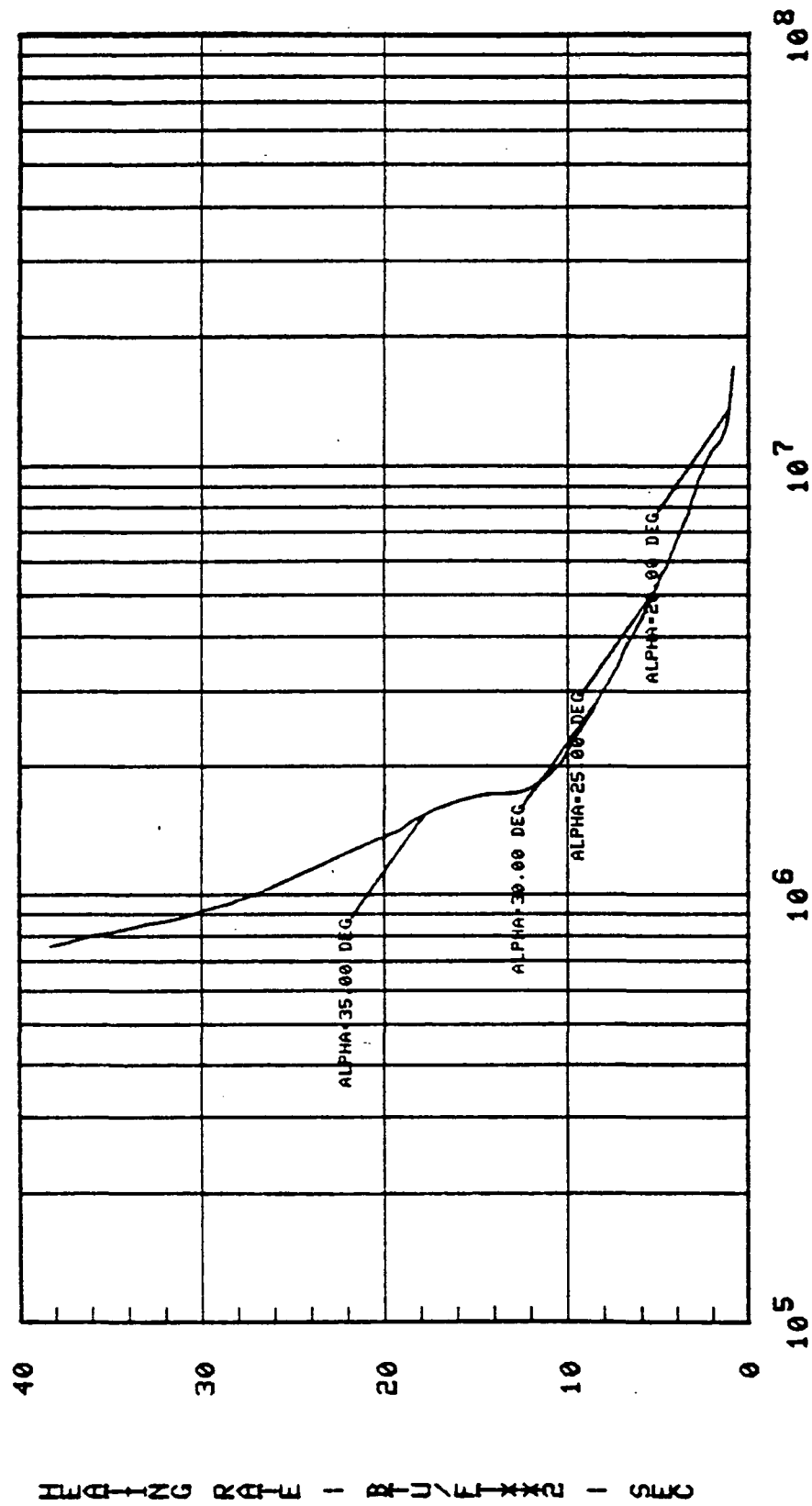
MACH NUMBER

HEATING RATE - BTU/FT^2/SEC

# STS-1 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

1085-1460 SEC

QREF

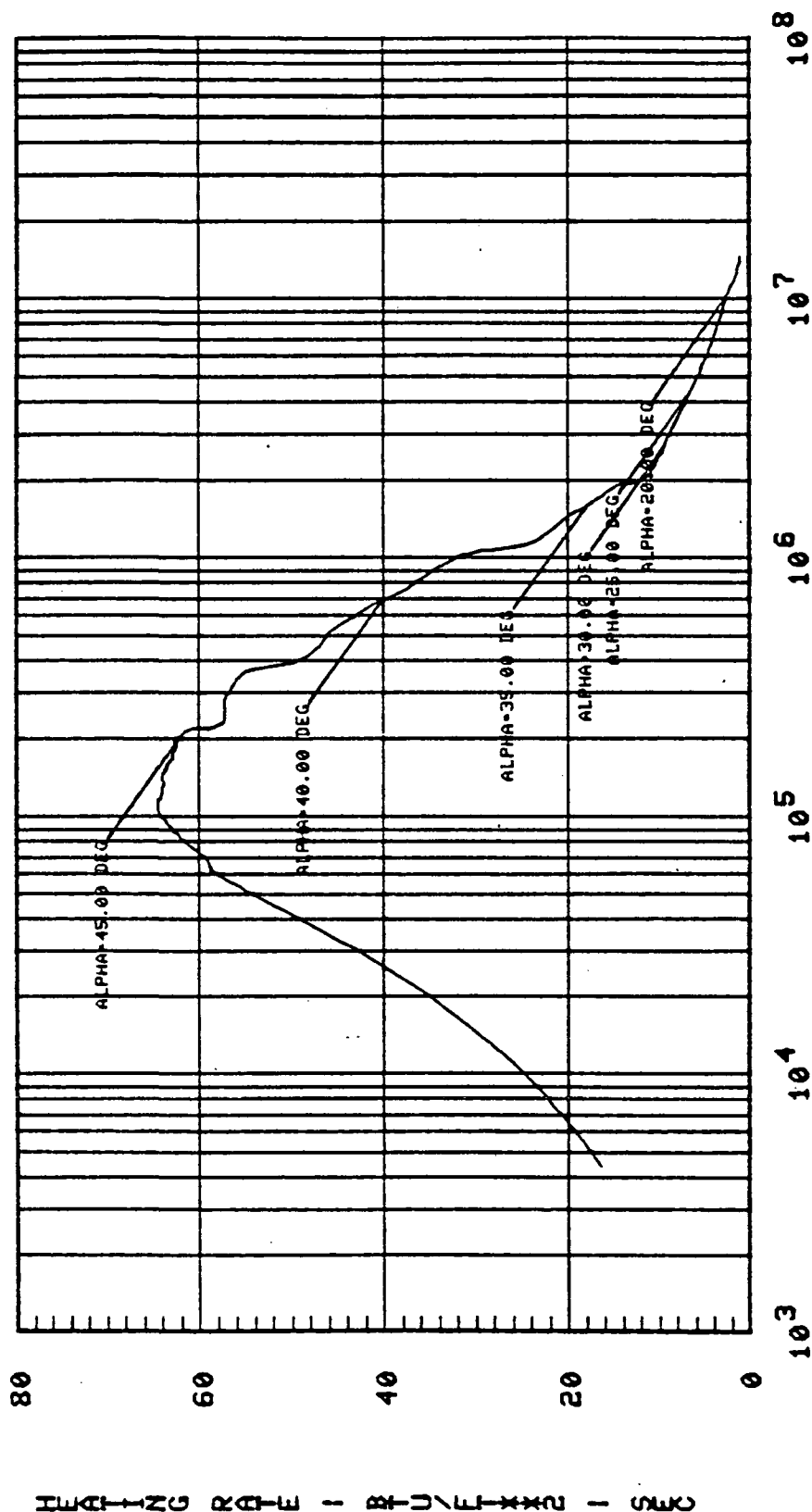


REYNOLDS NUMBER (NS) 06/18/84  
BASE TIME • 09049744.000 SEC.

# STS-2 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

200-1480 SEC

QREF



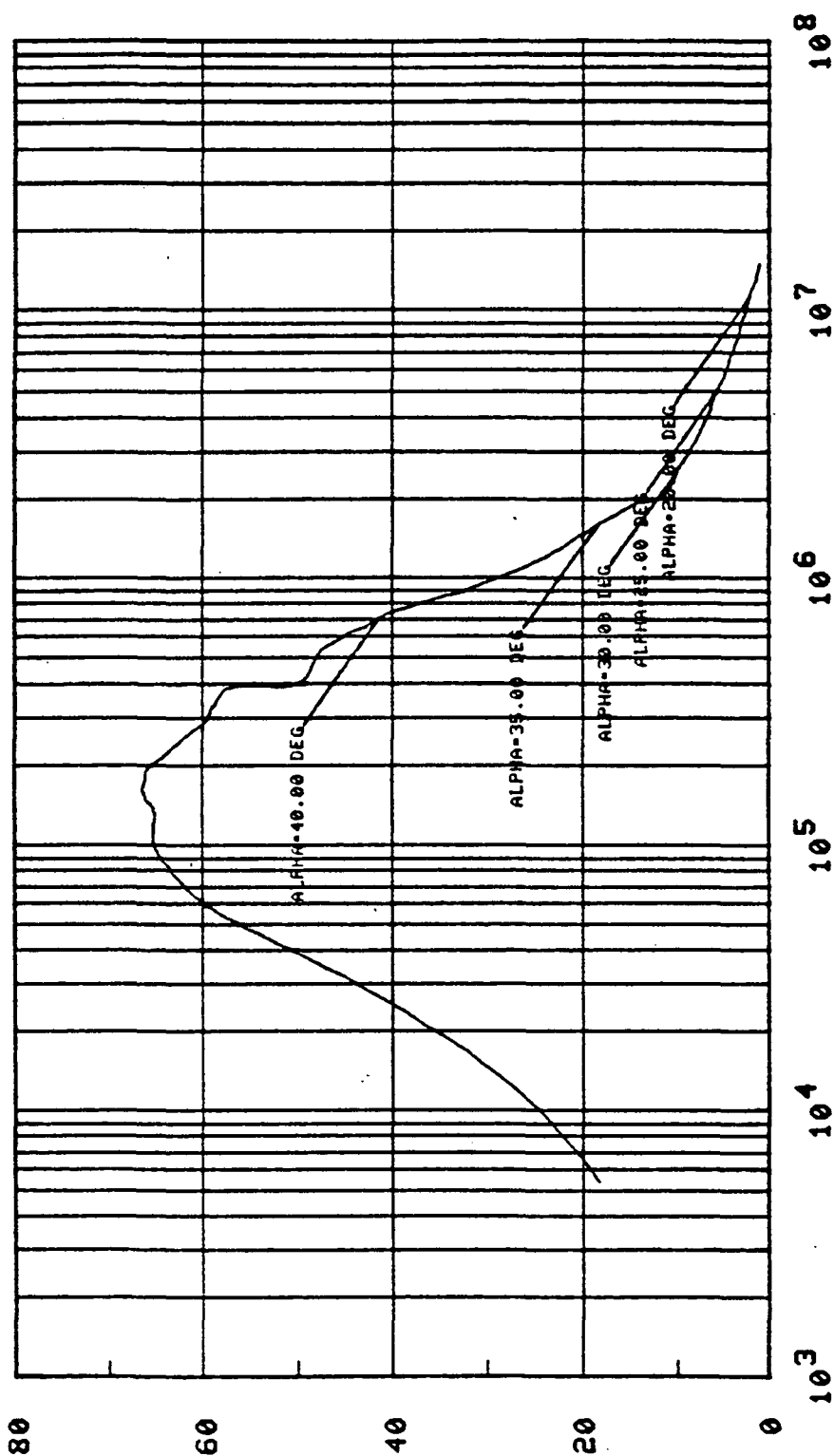
06/18/84  
BASE TIME - 87550236.000 SEC.

REYNOLDS NUMBER (NS)

# STS-3 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

200-1380 SEC

OREF



HEATING RATE - BTU/FT^2/SEC

06/18/84  
BASE TIME - 0774584.000 SEC.

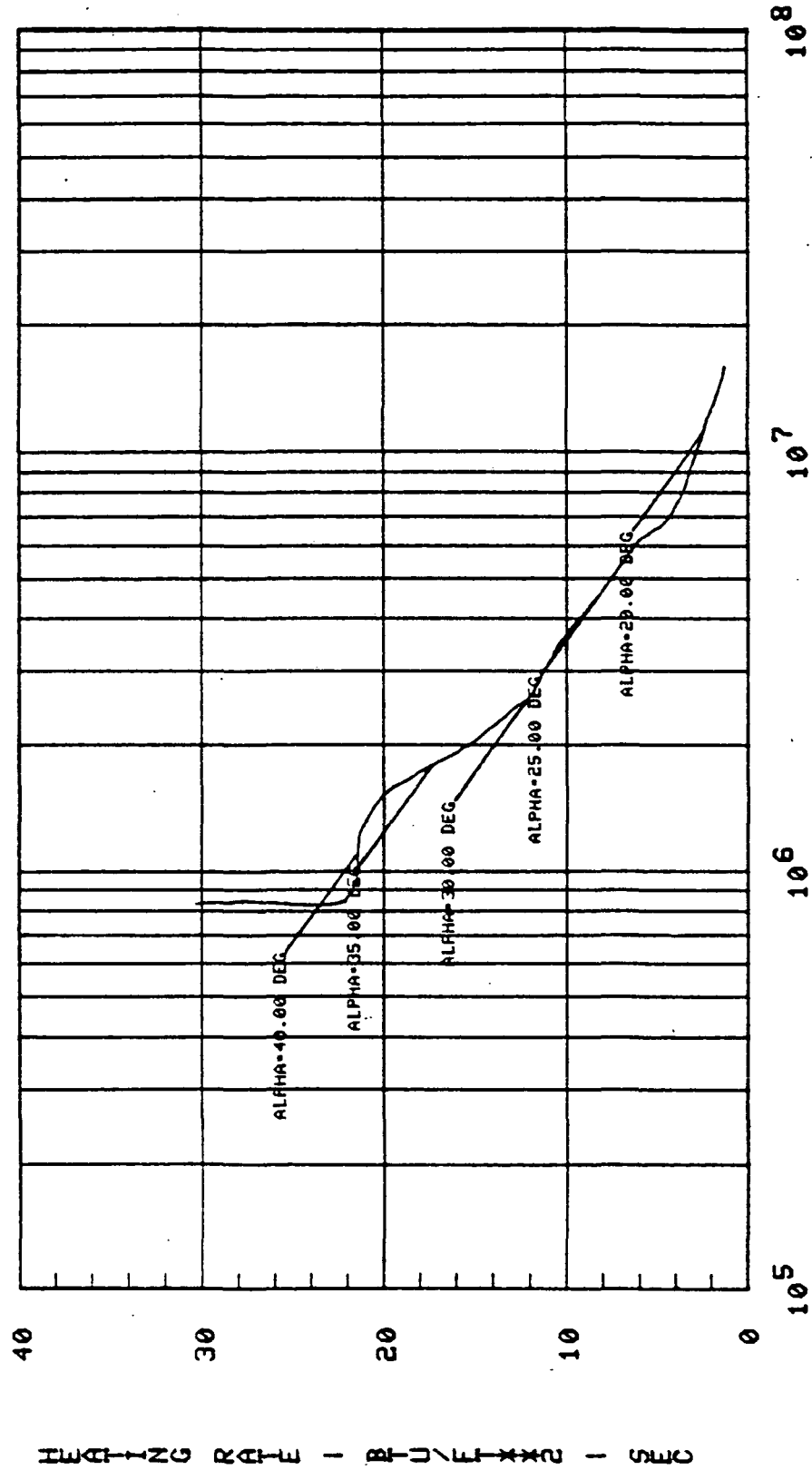
REYNOLDS NUMBER (NS)



# STS-4 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

965-1300 SEC

QREF

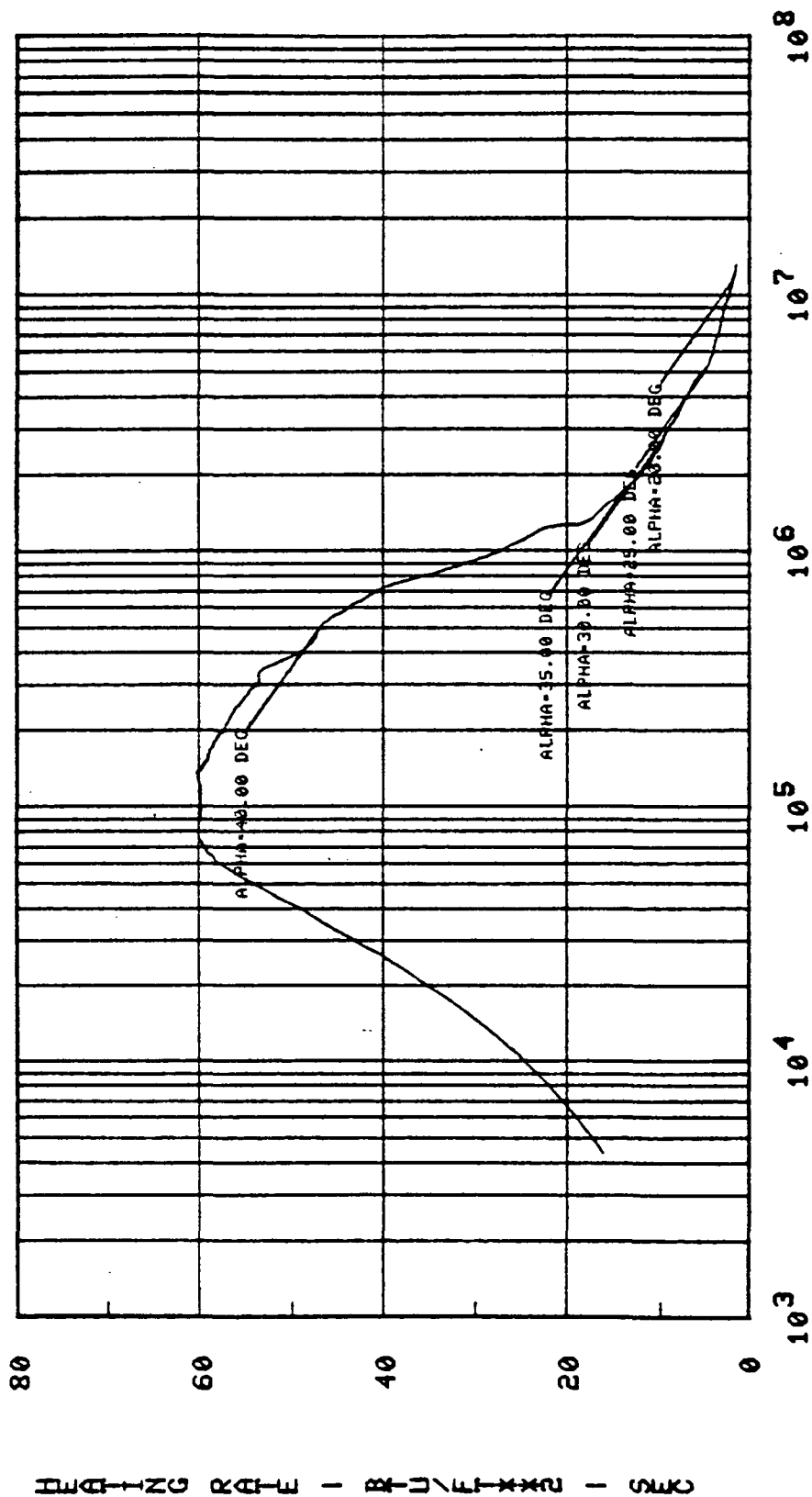


REYNOLDS NUMBER (NS) BASE TIME - 16040423.000 SEC. 06/19/84

# STS-5 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

150-1350 SEC

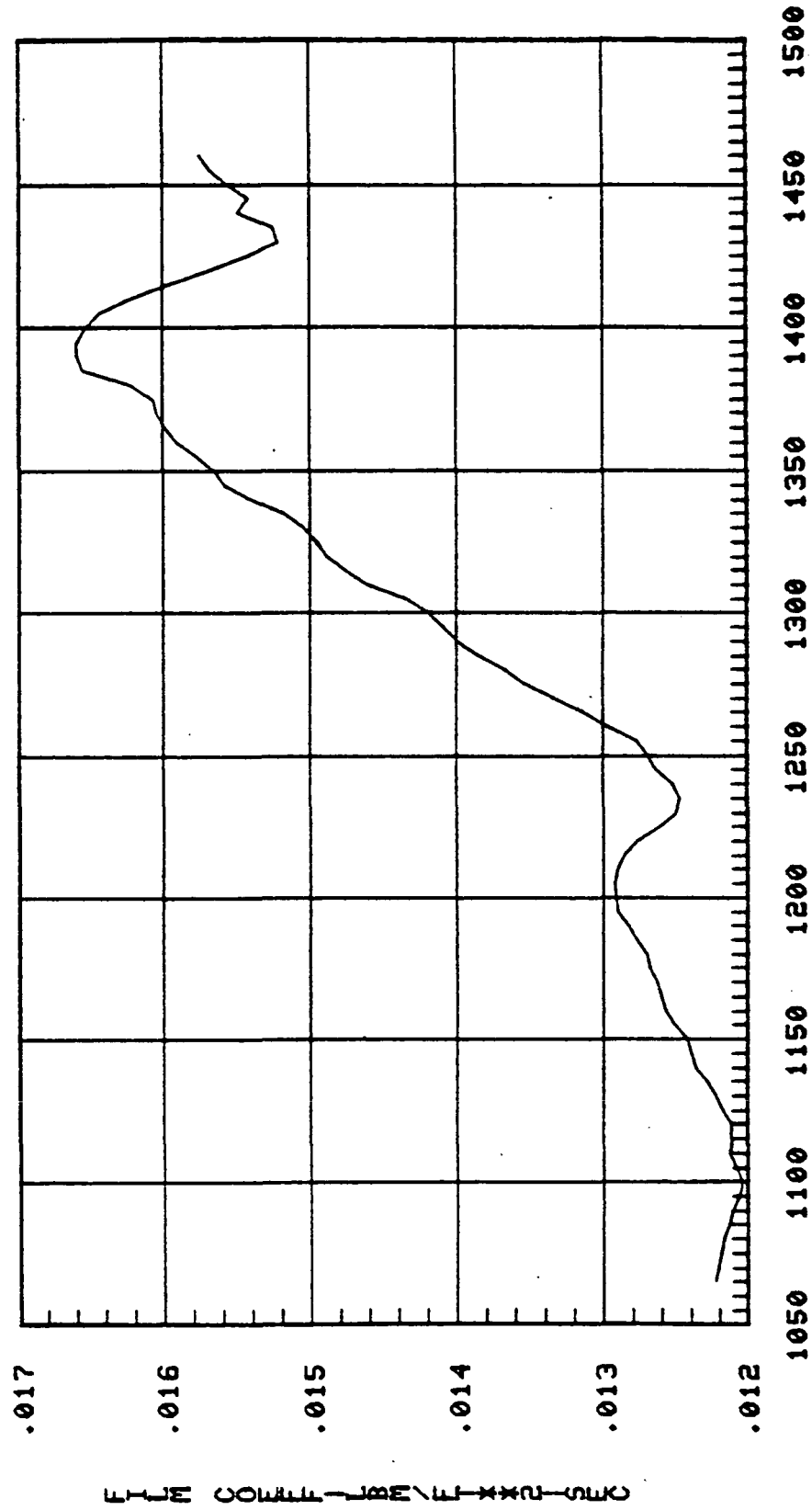
OREF



REYNOLDS NUMBER (NS) 06/19/84  
BASE TIME - 27698591.000 SEC.

# STS-1 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

HREF

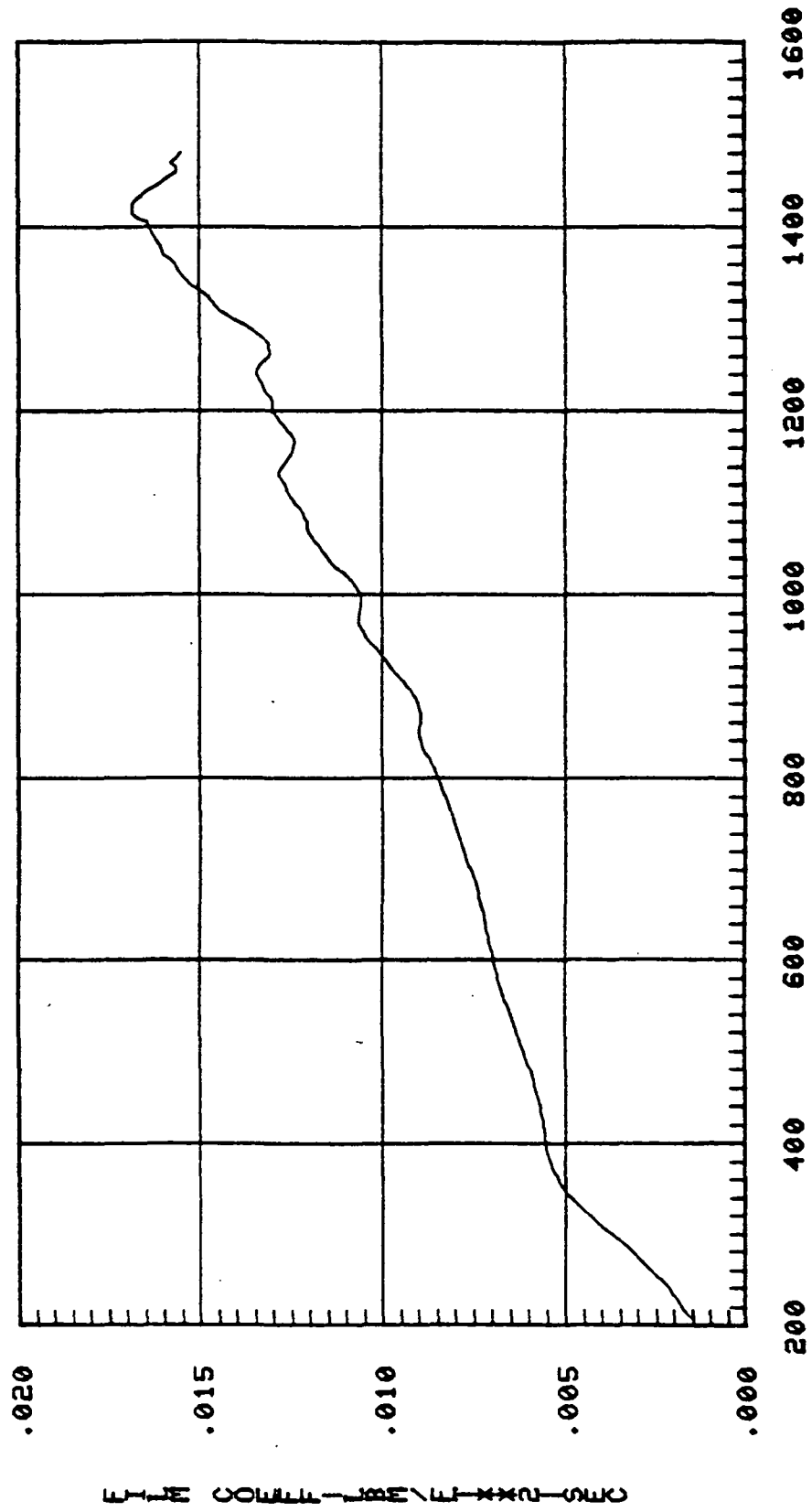


TIME - SECONDS

06/18/84

# STS-2 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

HREF

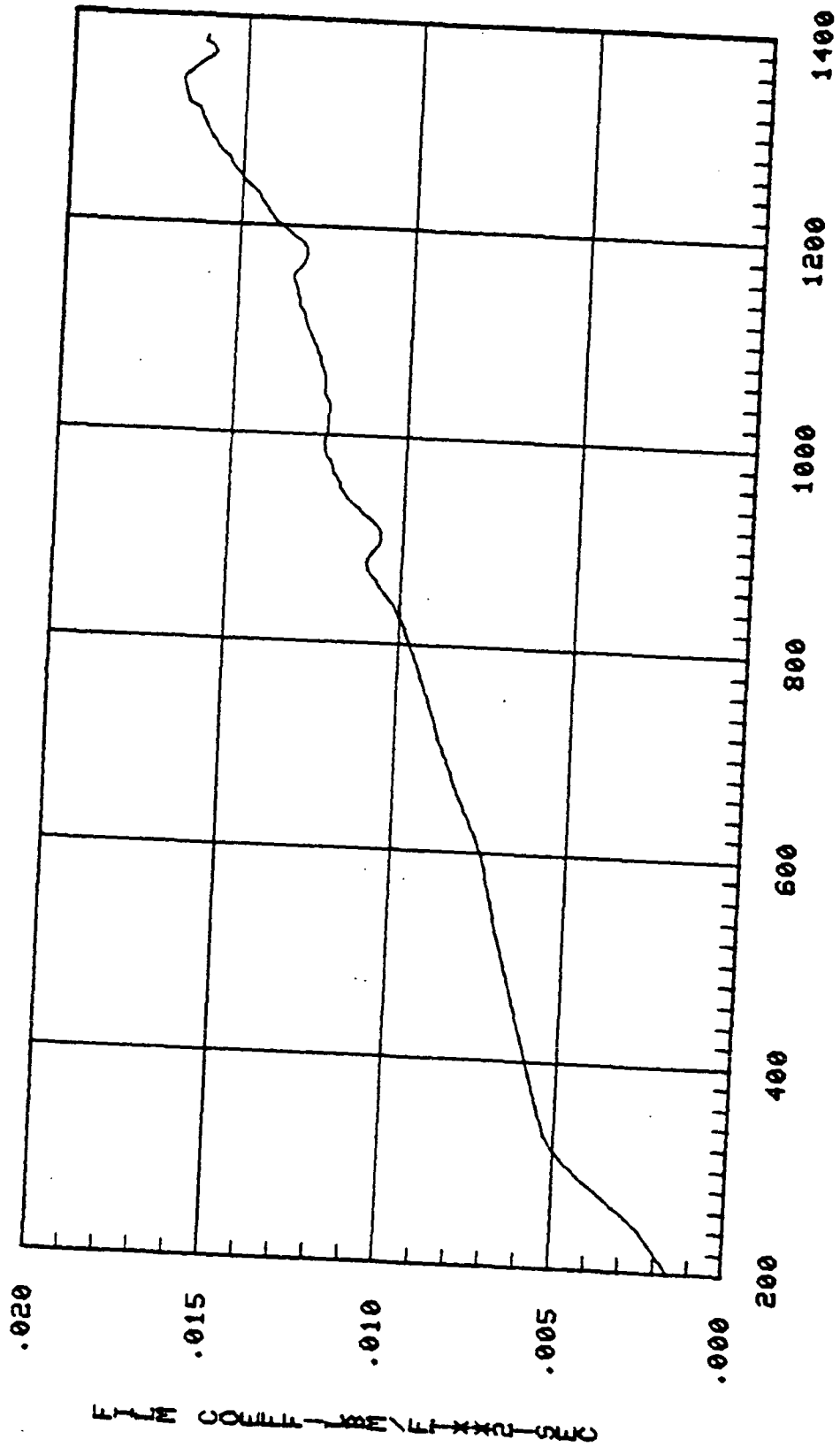


TIME - SECONDS

06/18/84

# STS-3 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

HREF

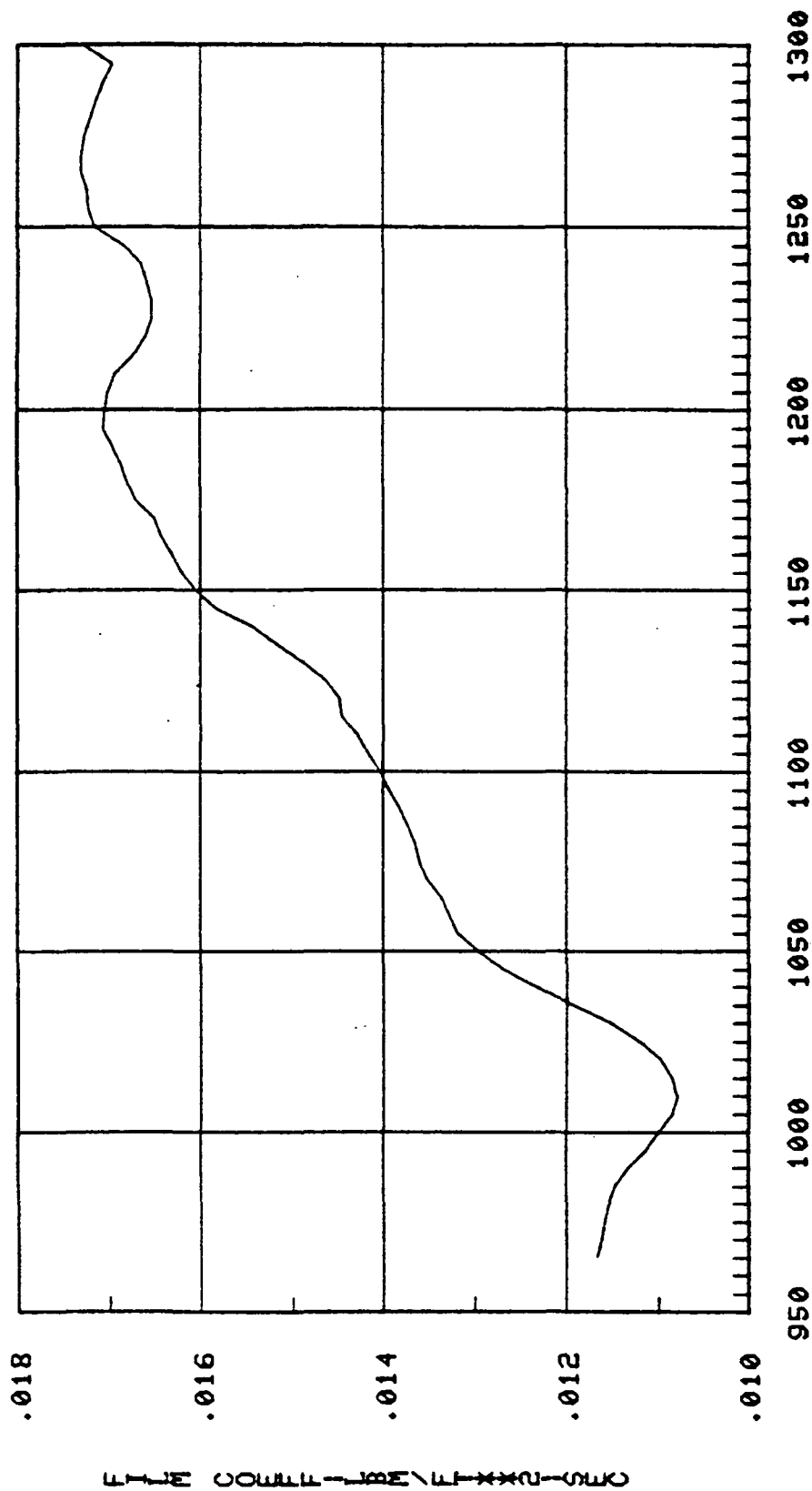


TIME - SECONDS

06/18/84

# STS-4 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ HREF



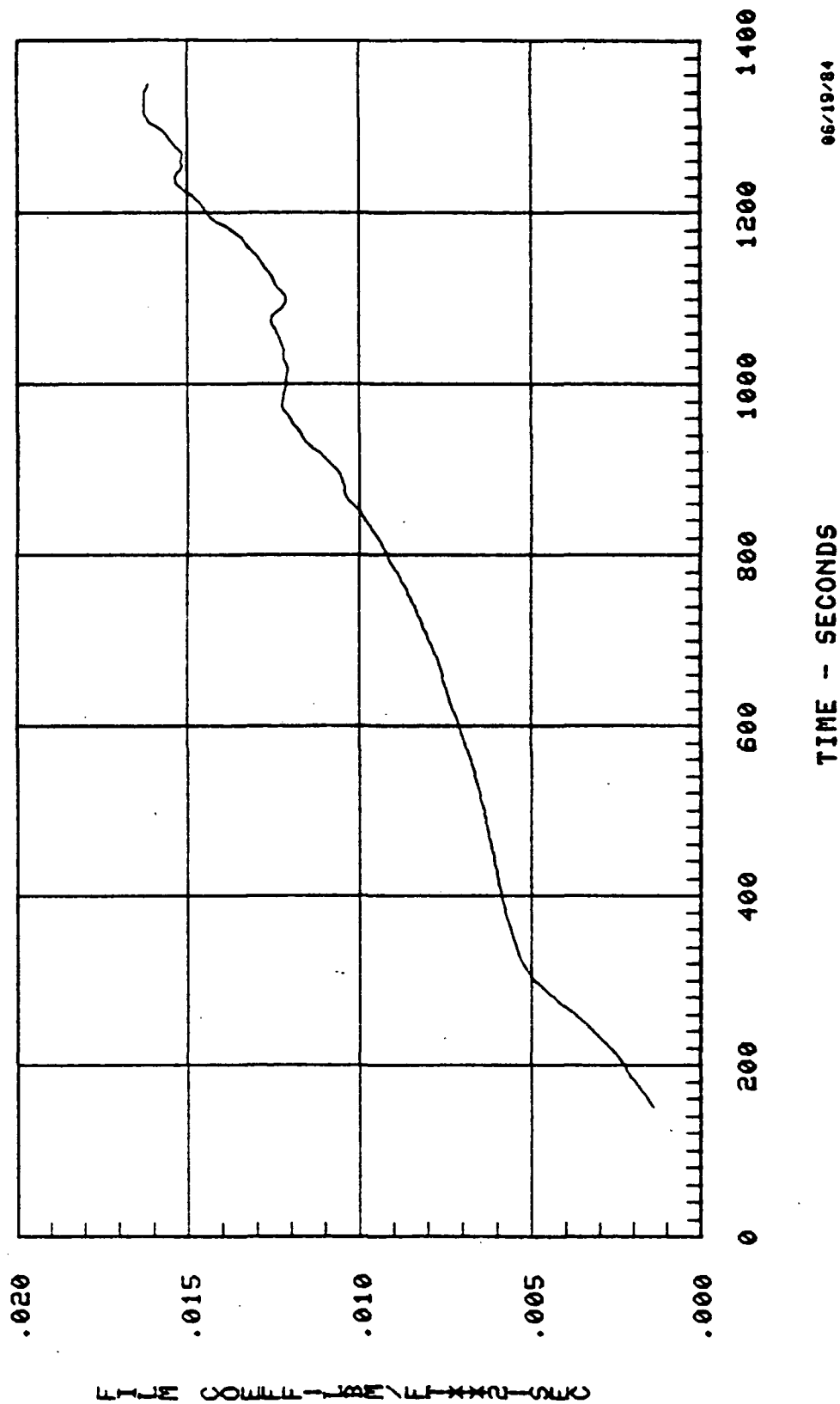
06/19/84

TIME - SECONDS

FLIGHT COEFFICIENT - 1/32 G-SEK

# STS-5 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

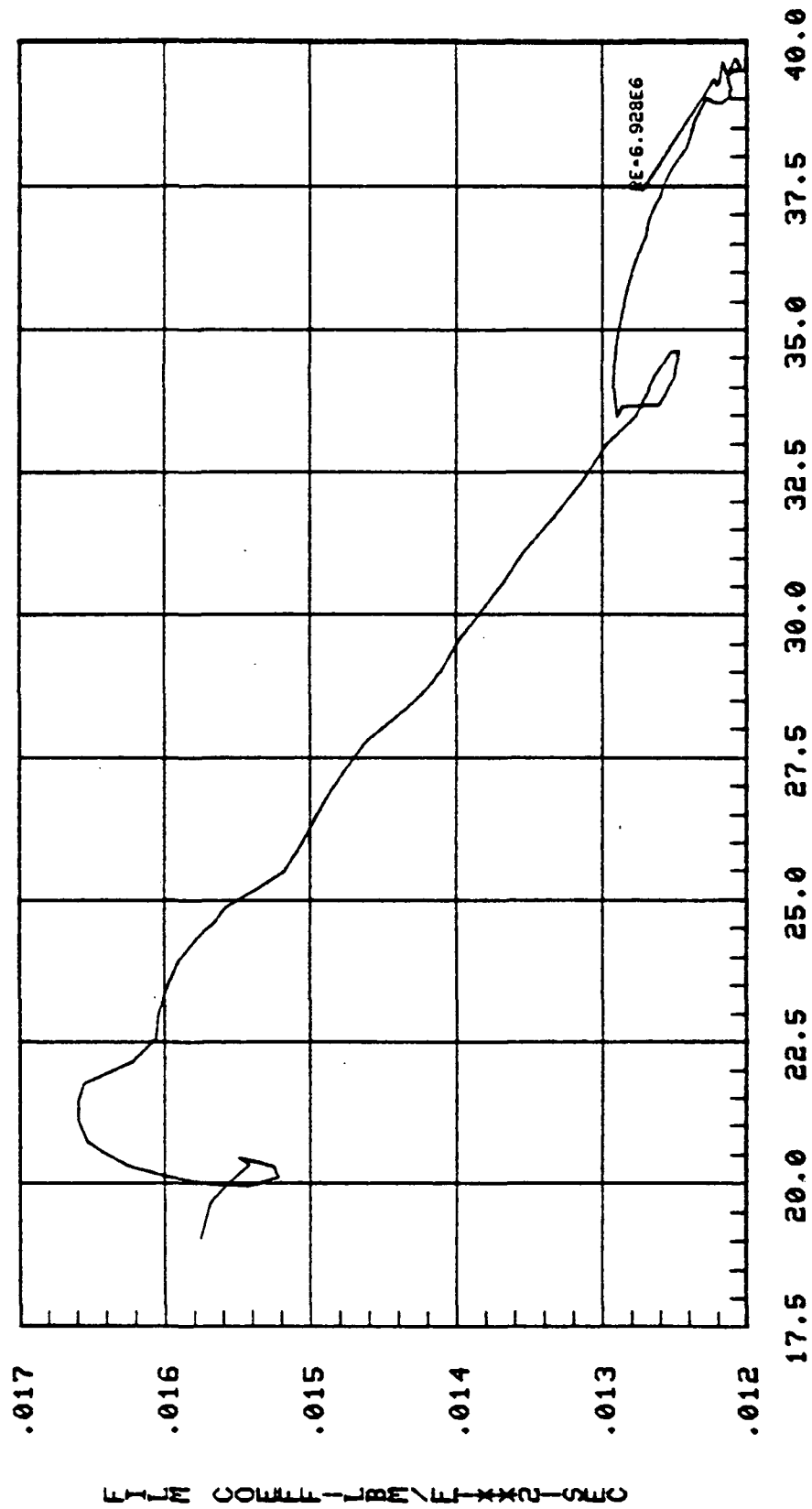
HREF



# STS-1 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

1065-1460 SEC

HREF



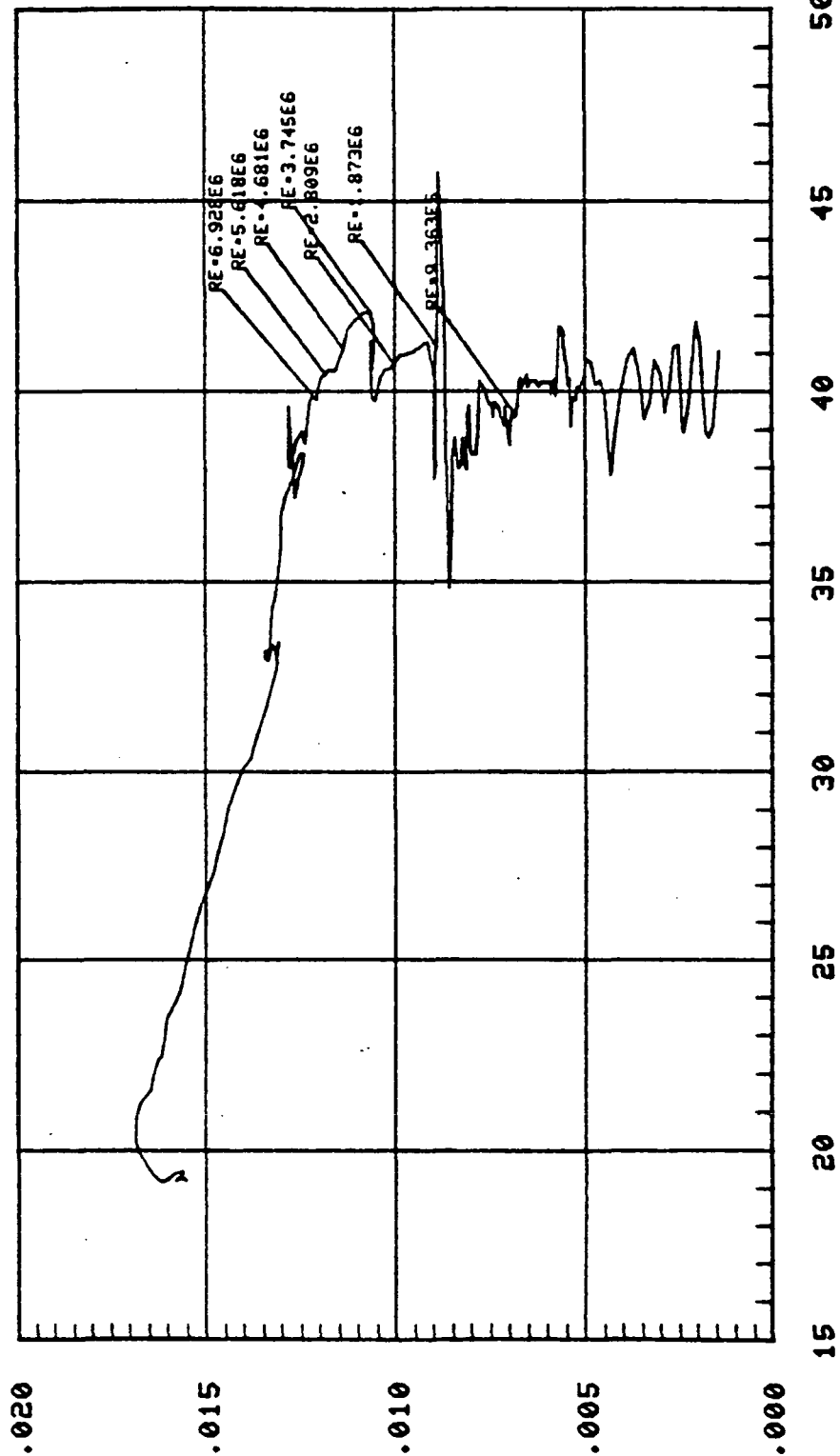
06/18/84  
BASE TIME - 09049744.000 SEC.



# STS-2 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

200-1480 SEC

HREF

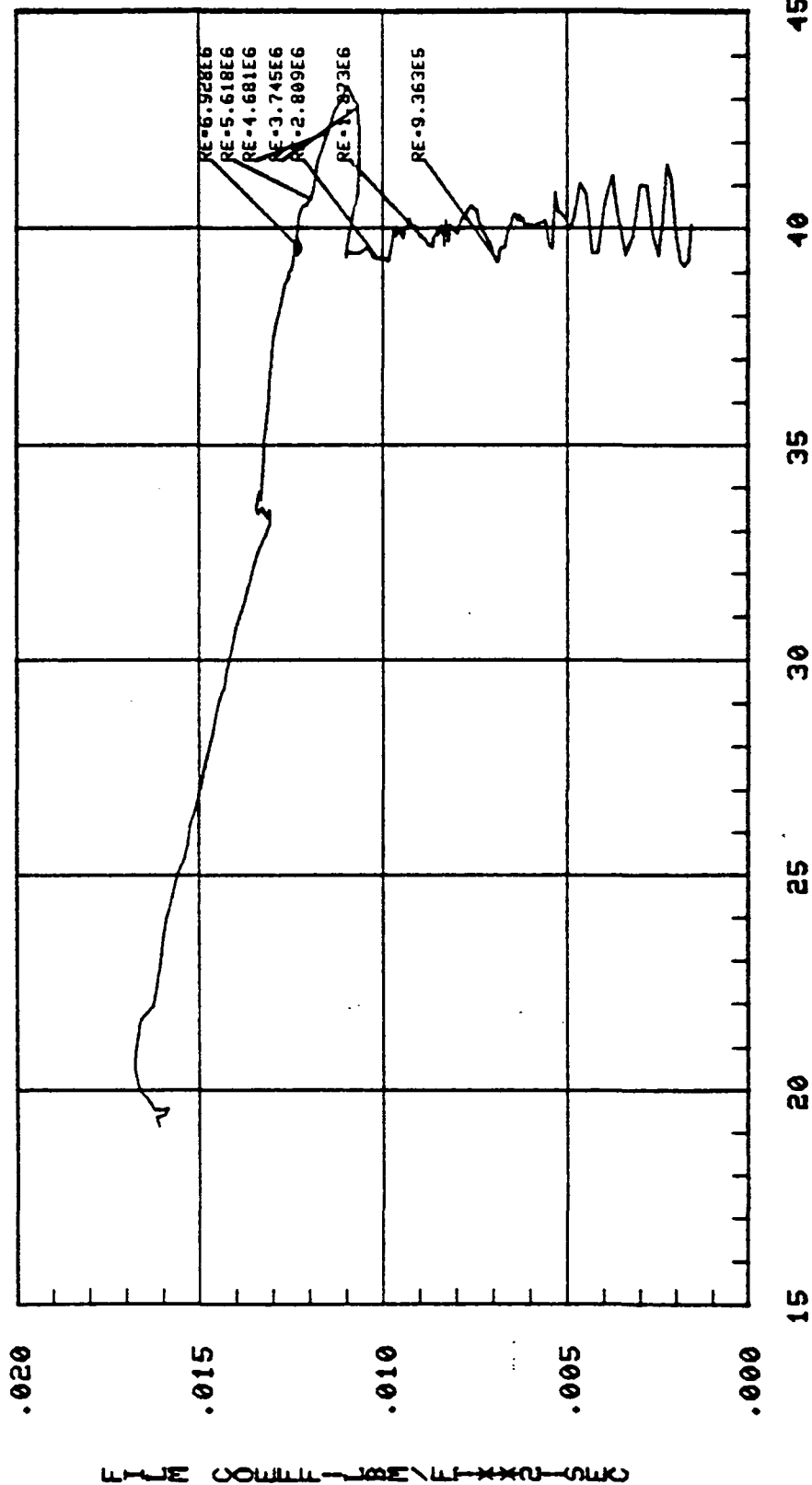


06/18/84  
BASE TIME - 27650236.000 SEC.

# STS-3 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

200-1380 SEC

HREF



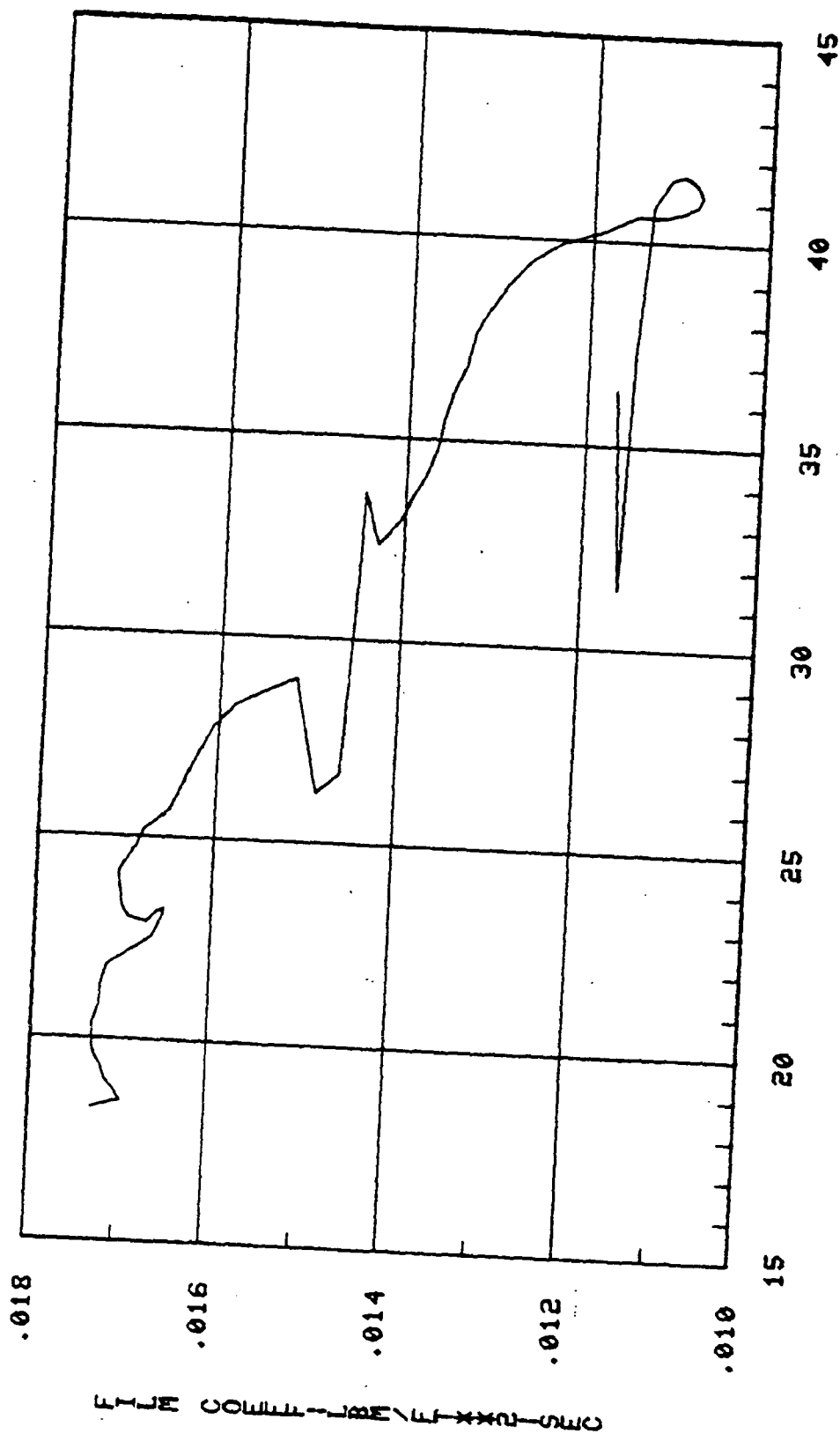
06/18/84  
BASE TIME - 07745684.000 SEC.

ANGLE-OF-ATTACK - DEG

# STS-4 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

965-1300 SEC

HREF



ANGLE-OF-ATTACK - DEG

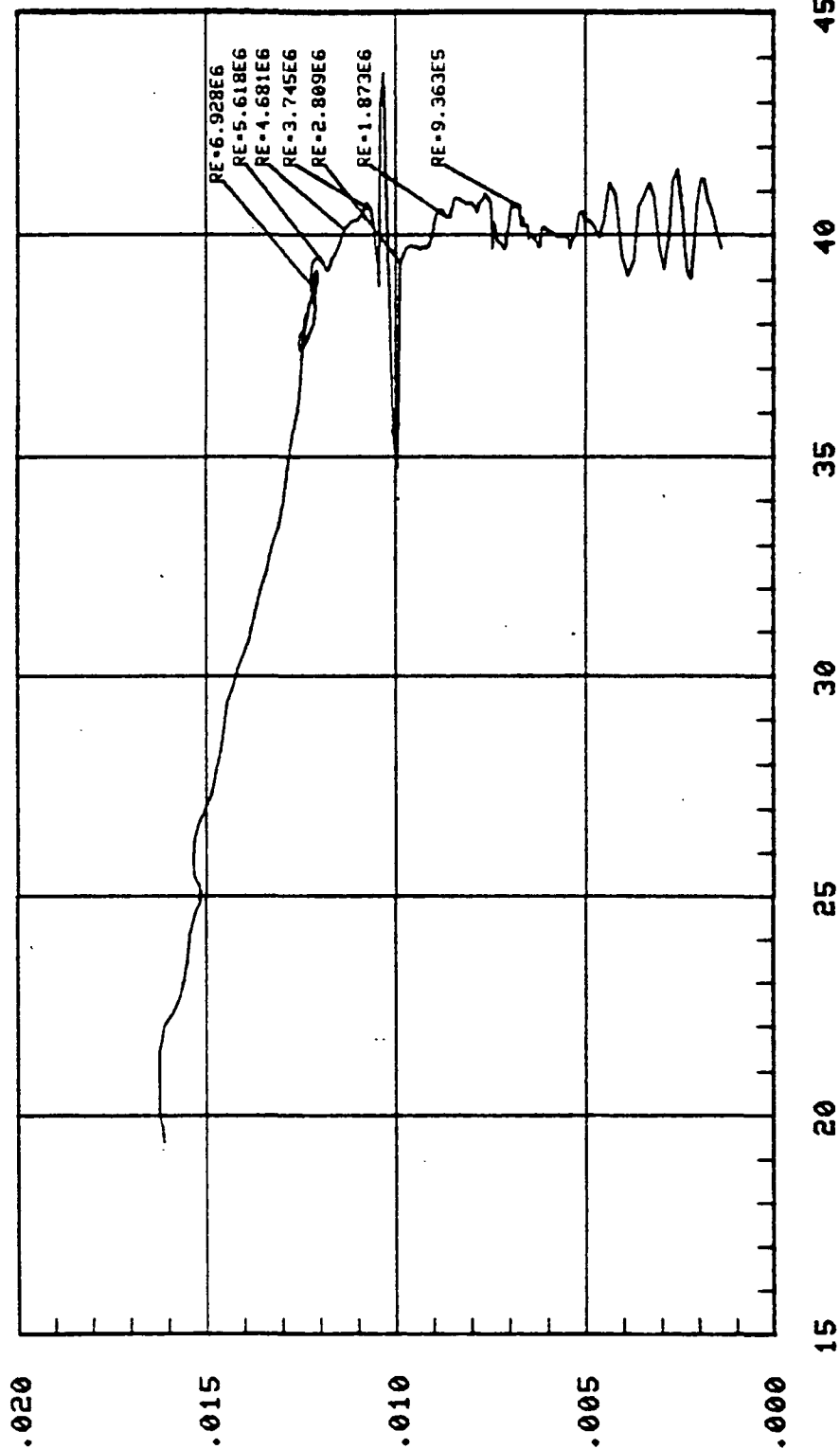
BASE TIME - 16040423.000 SEC.

06/19/84

# STS-5 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

150-1350 SEC

HREF



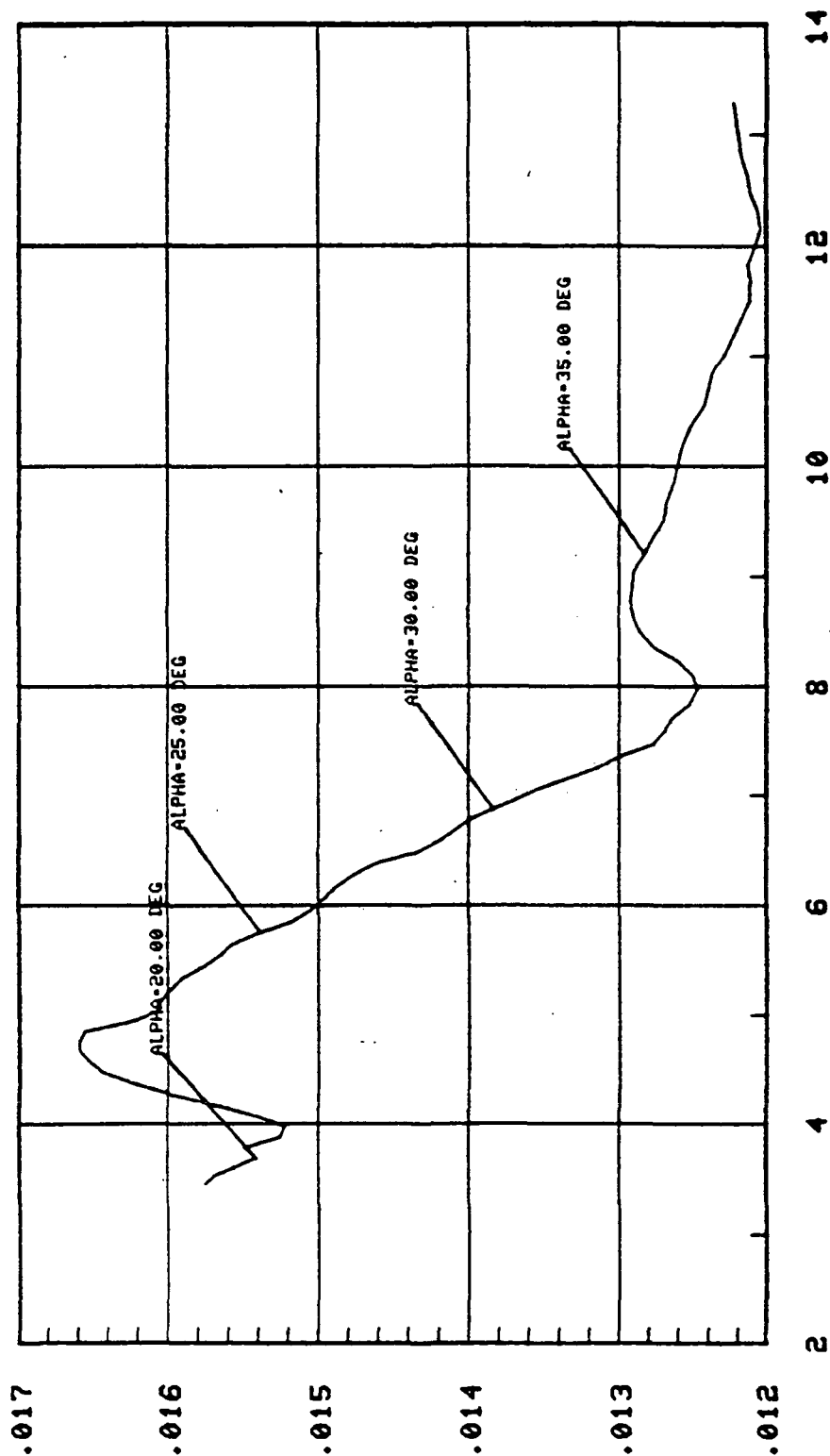
06/19/84  
BASE TIME - 27698591.000 SEC.

ANGLE-OF-ATTACK - DEG

# STS-1 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

1065-1460 SEC

HREF



06/18/84  
BASE TIME - 09049744.000 SEC.

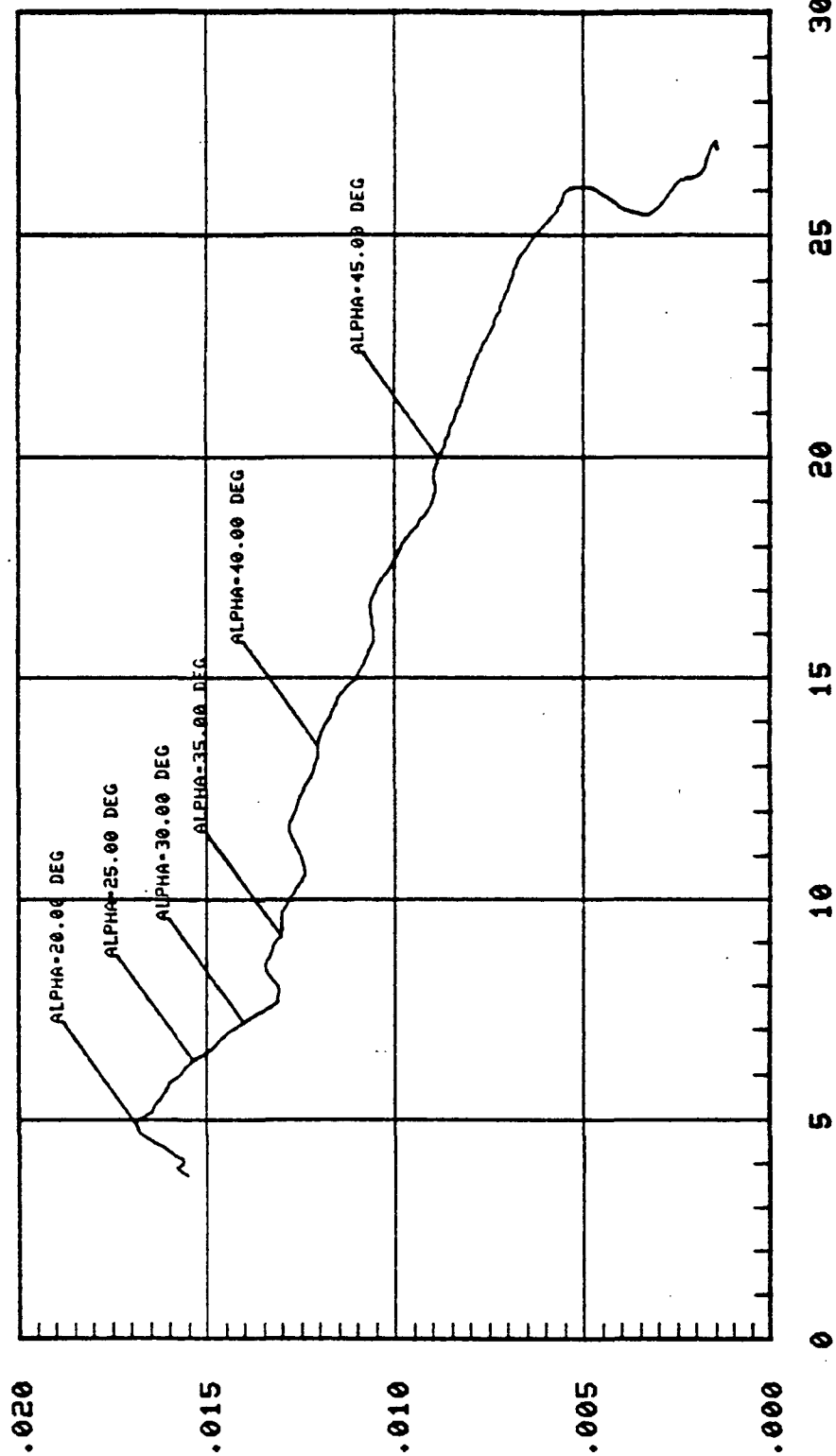
MACH NUMBER

CLIMB COEFFICIENT (C<sub>L</sub>)

# STS-2 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

200-1480 SEC

HREF



06/18/84  
BASE TIME - 8750236.000 SEC.

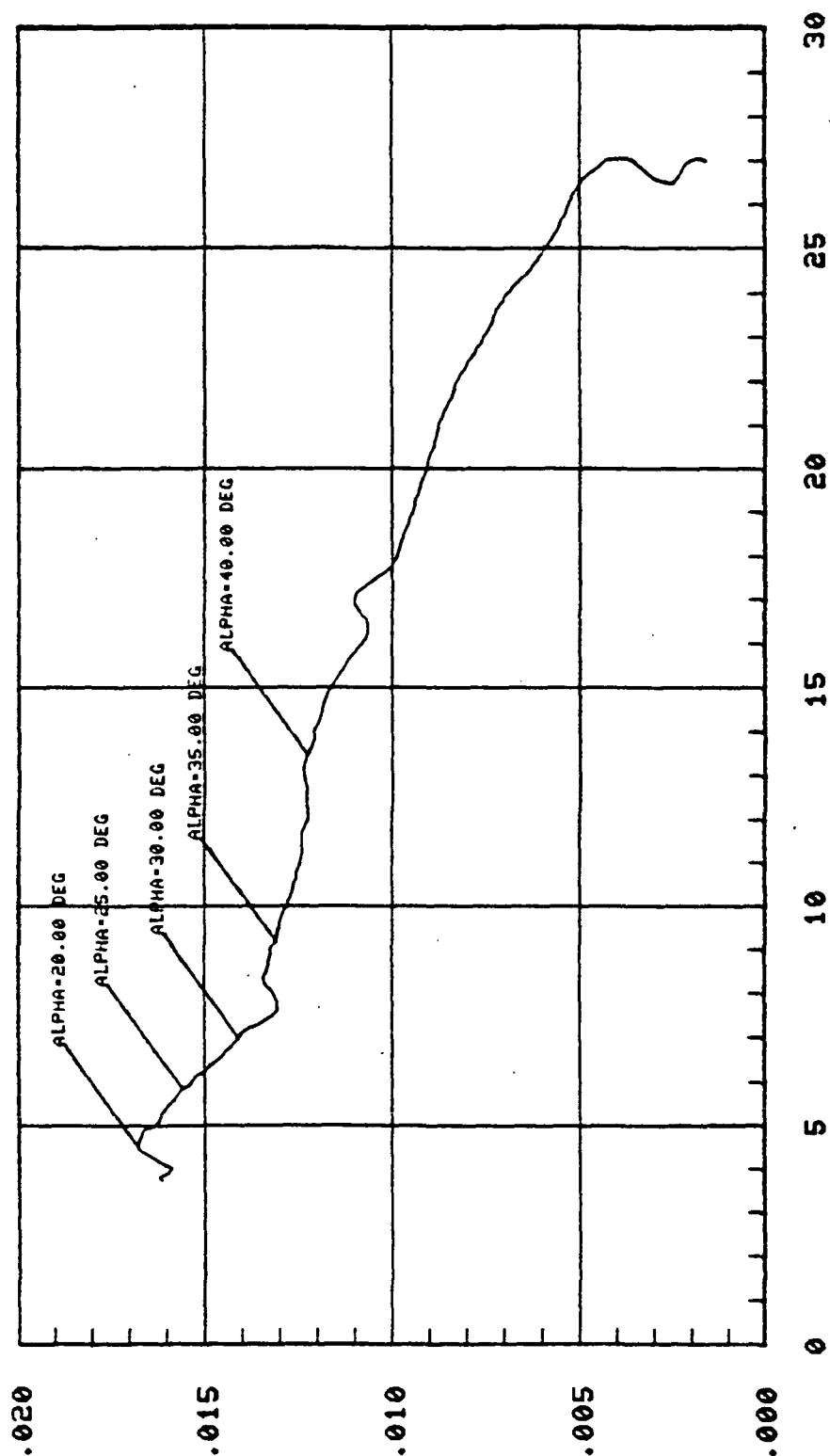
MACH NUMBER

LIFT COEFFICIENT VS MACH NUMBER

# STS-3 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

200-1380 SEC

HREF



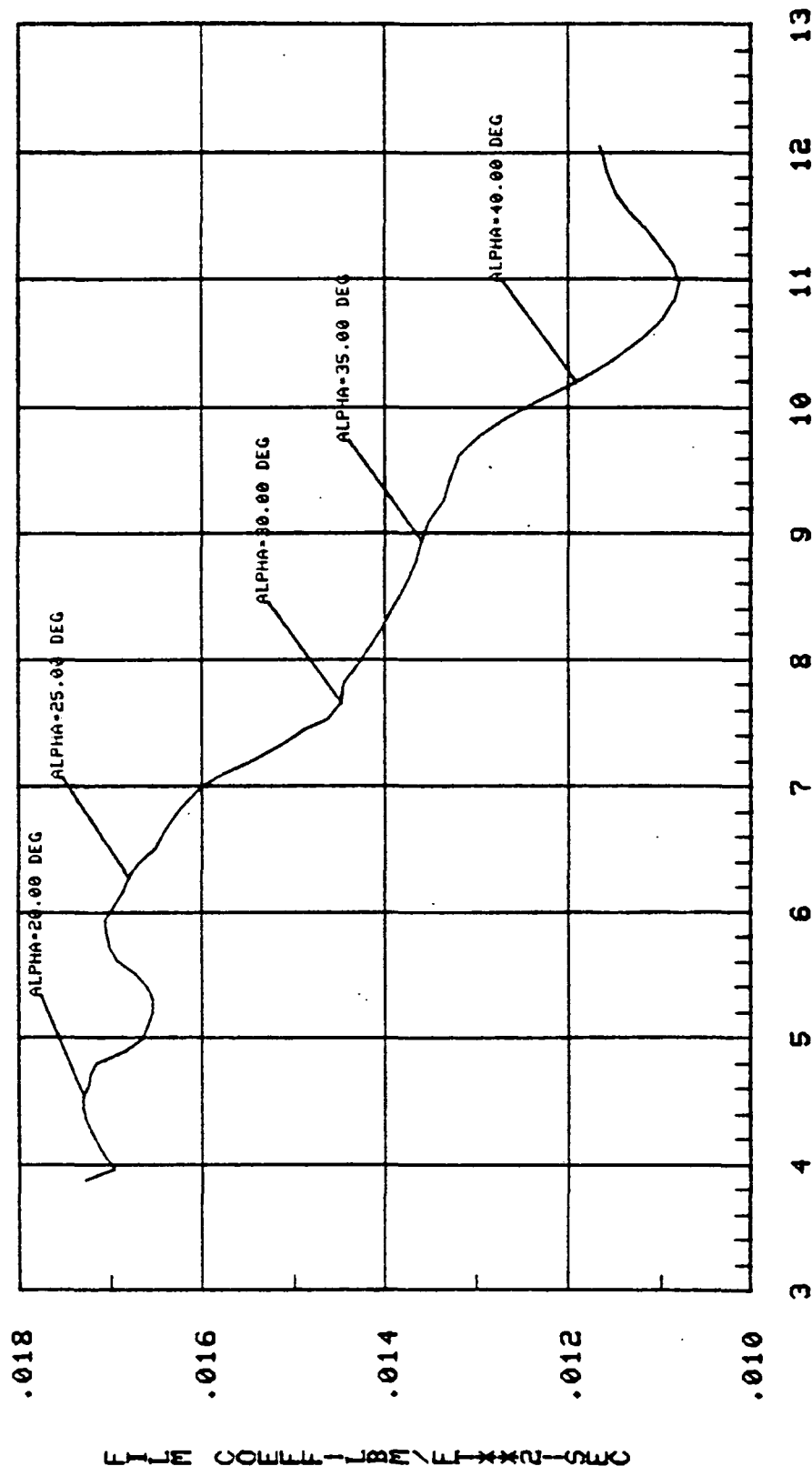
06/10/84  
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MACH NUMBER

# STS-4 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

965-1300 SEC

HREF



06/19/84  
BASE TIME - 16040423.000 SEC.

MACH NUMBER

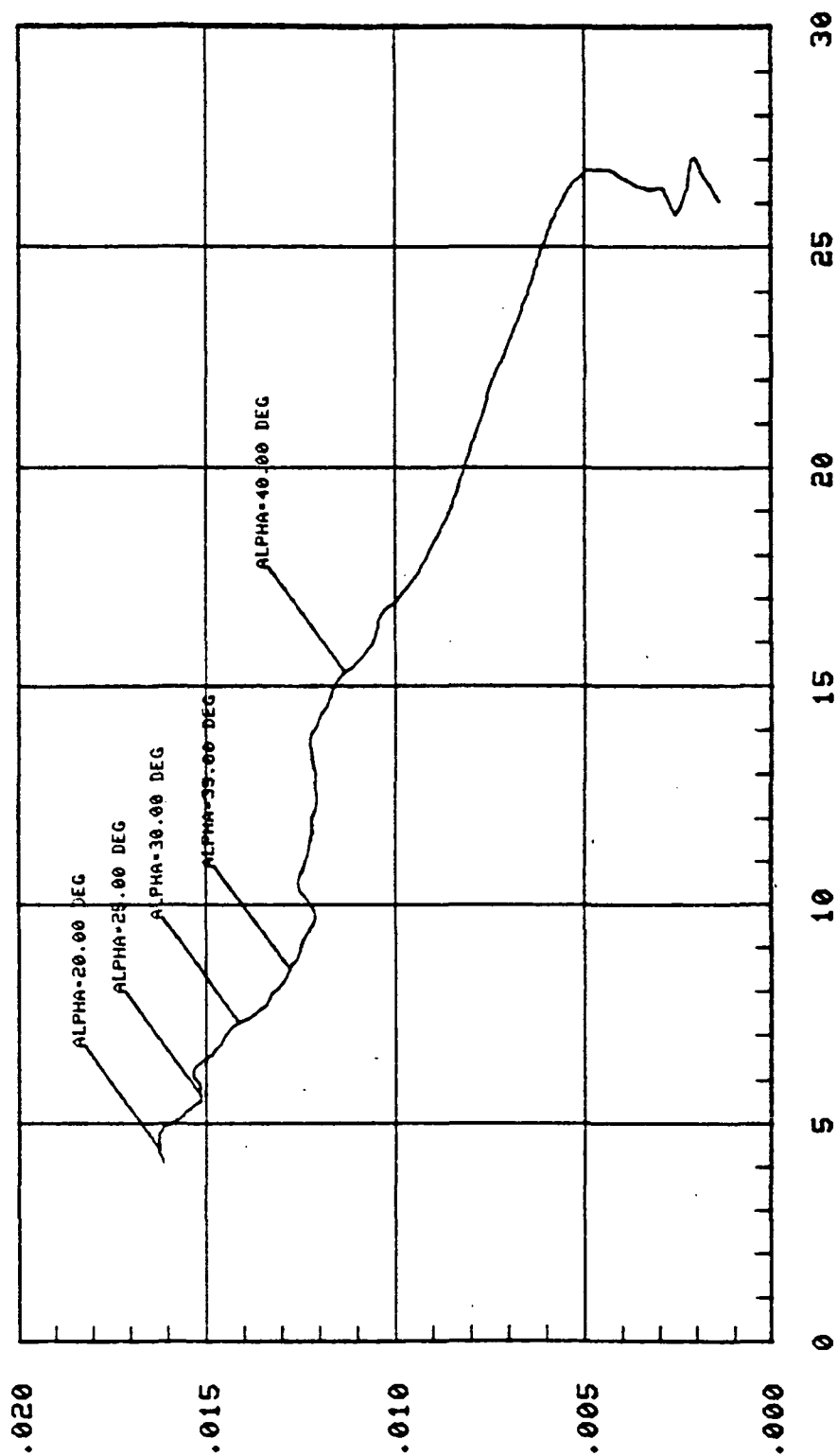
FT LIFT COEFF - LB/FT\*\*2 - SEC



# STS-5 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

150-1350 SEC

HREF



06/19/84  
BASE TIME - 27698591.000 SEC.

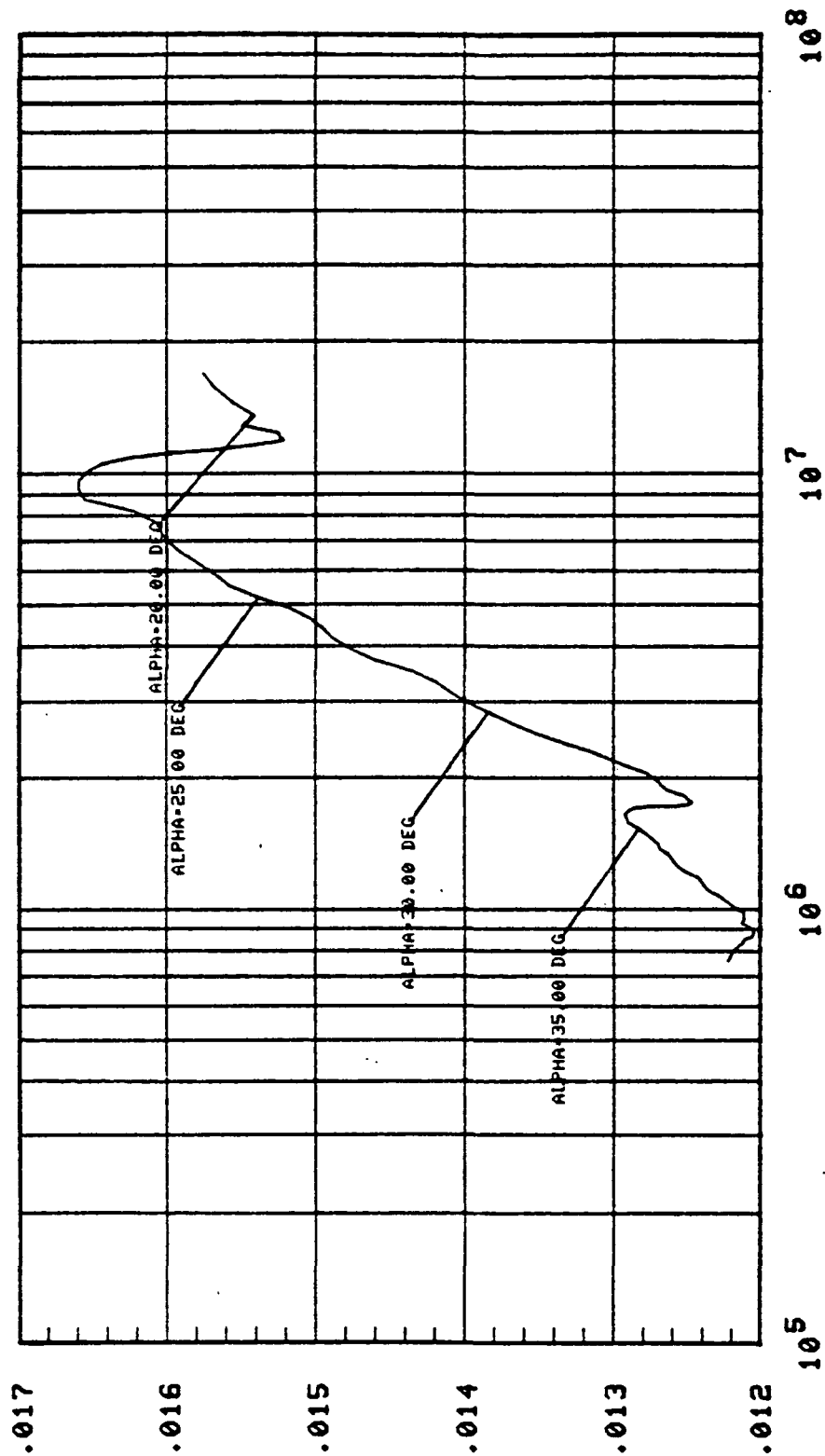
MACH NUMBER

PERIOD - SECONDS

# STS-1 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

1065-1460 SEC

HREF

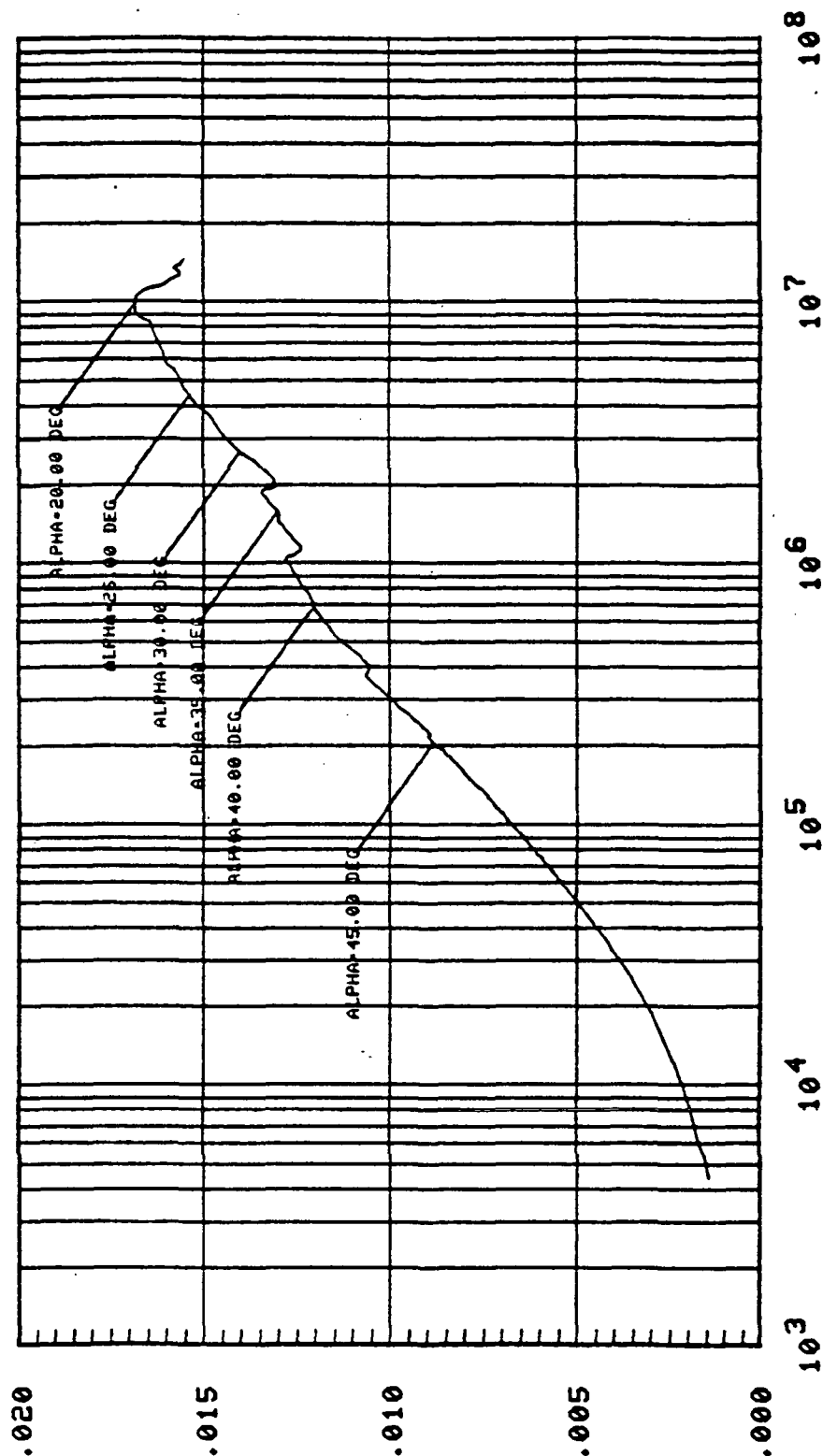


REYNOLDS NUMBER (NS) 06/18/84 BASE TIME - 09040744.000 SEC.

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200-1480 SEC

HREF



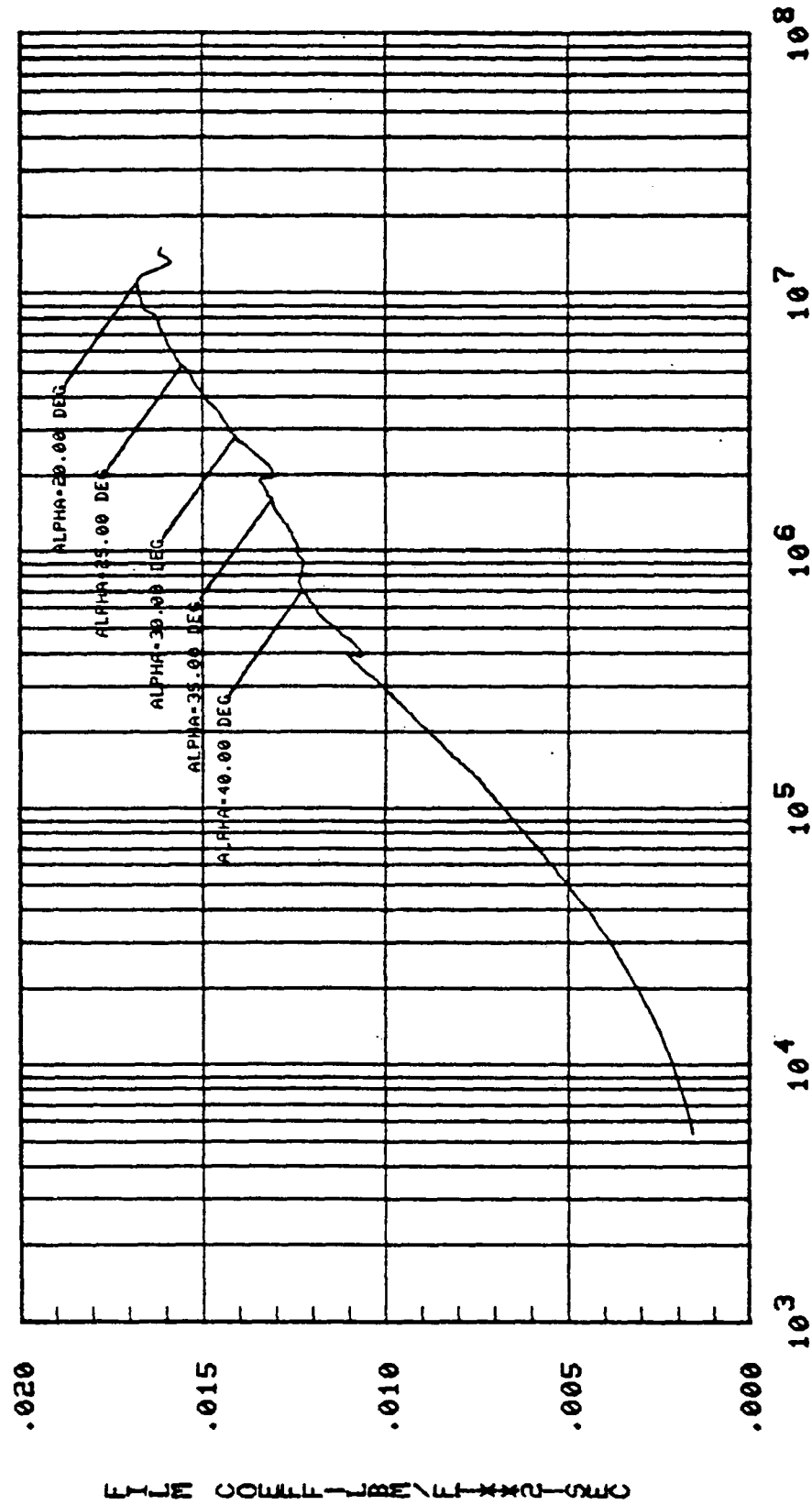
06/18/84  
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REYNOLDS NUMBER (NS)

# STS-3 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

200-1380 SEC

HREF



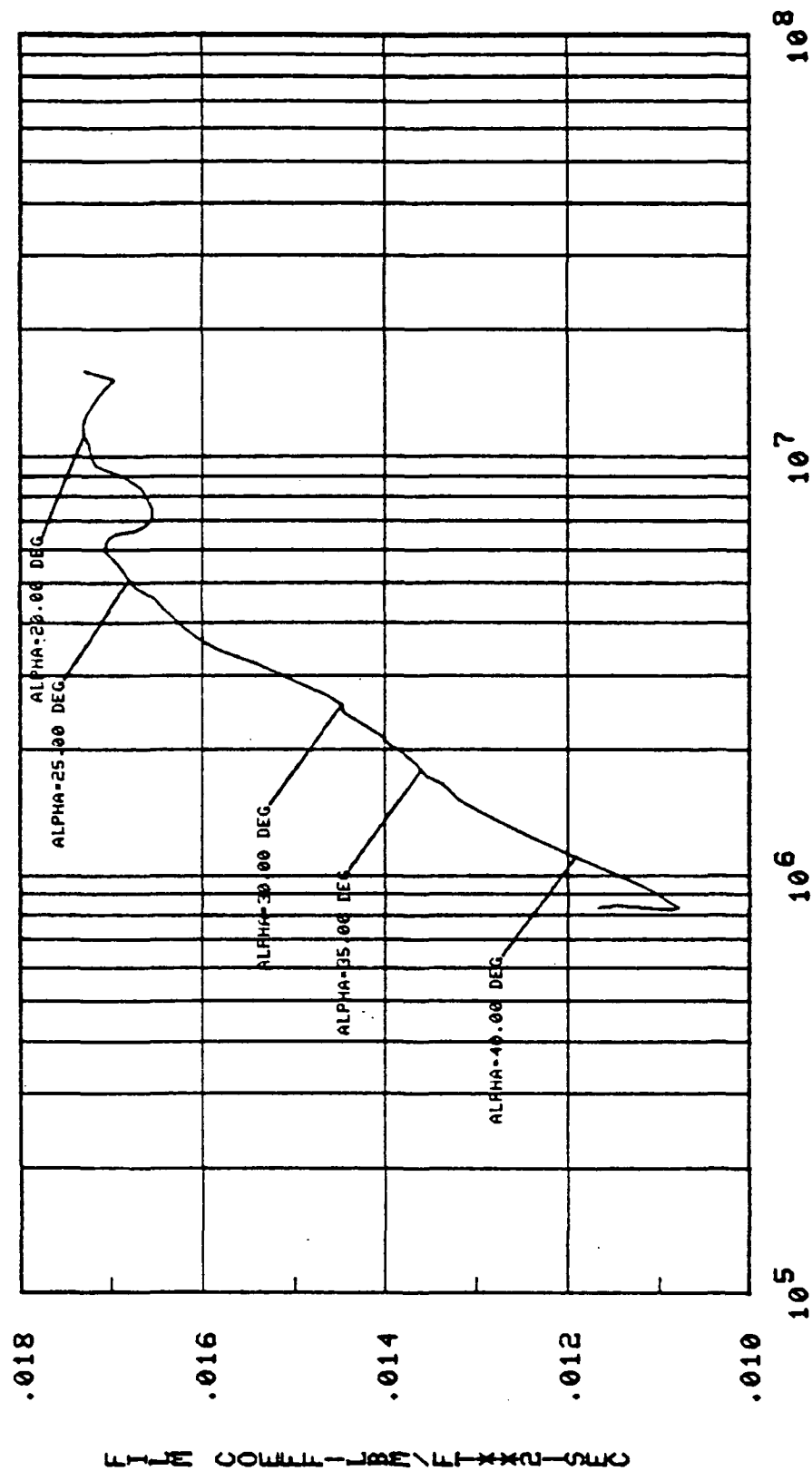
06/18/84  
BASE TIME - 07745684.000 SEC.

REYNOLDS NUMBER (NS)

# STS-4 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

965-1300 SEC

HREF

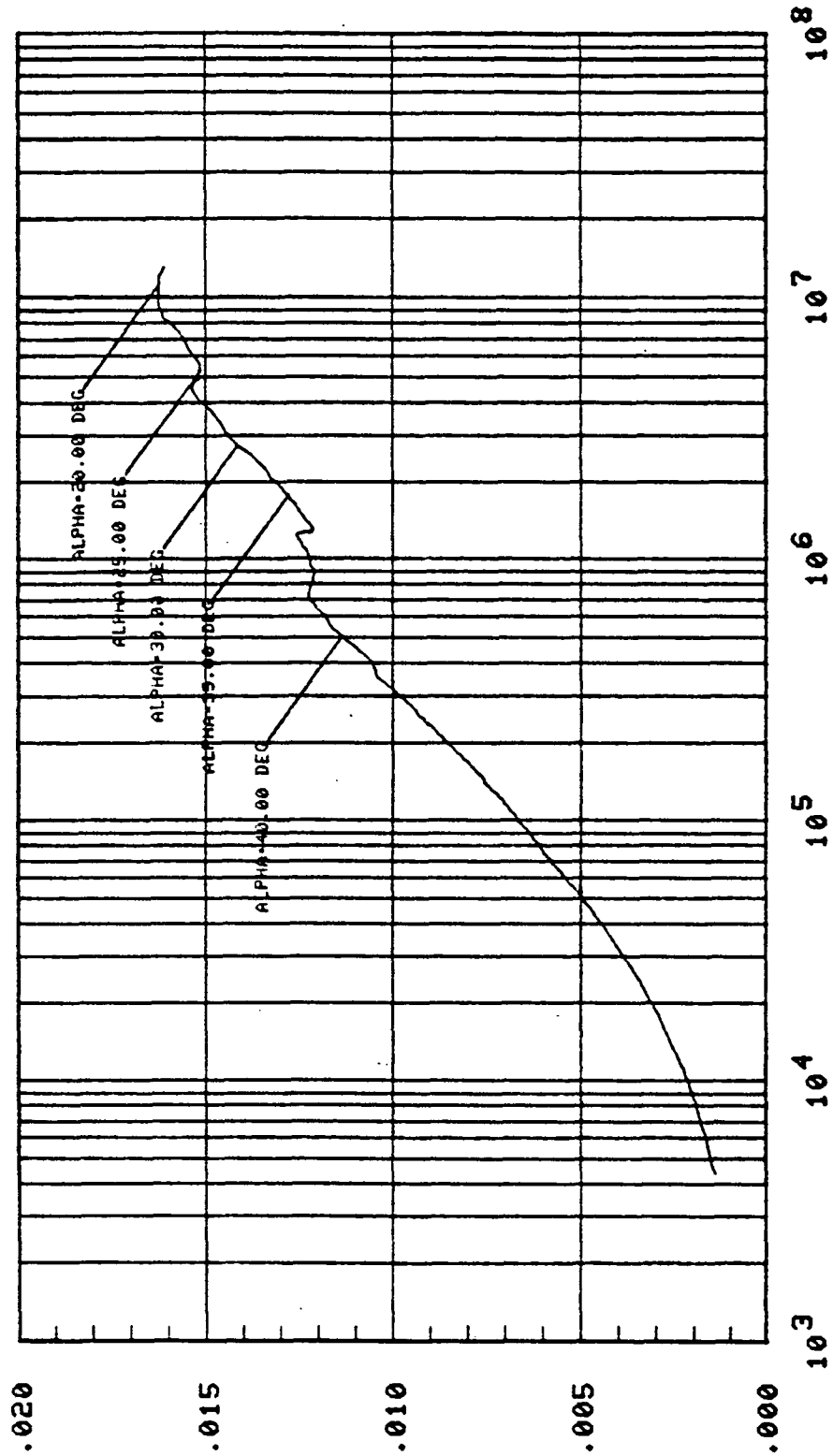


REYNOLDS NUMBER (NS) 06/19/84 BASE TIME - 16040423.000 SEC.

# STS-5 (107 FT LENGTH CL) FLIGHT PARAMETER COMPARISON

150-1350 SEC

MREF



FLIGHT COEFFICIENT - LBS/FT<sup>2</sup> X SEC

REYNOLDS NUMBER (NS) 06/19/84  
BASE TIME - 27698591.000 SEC.

APPENDIX B

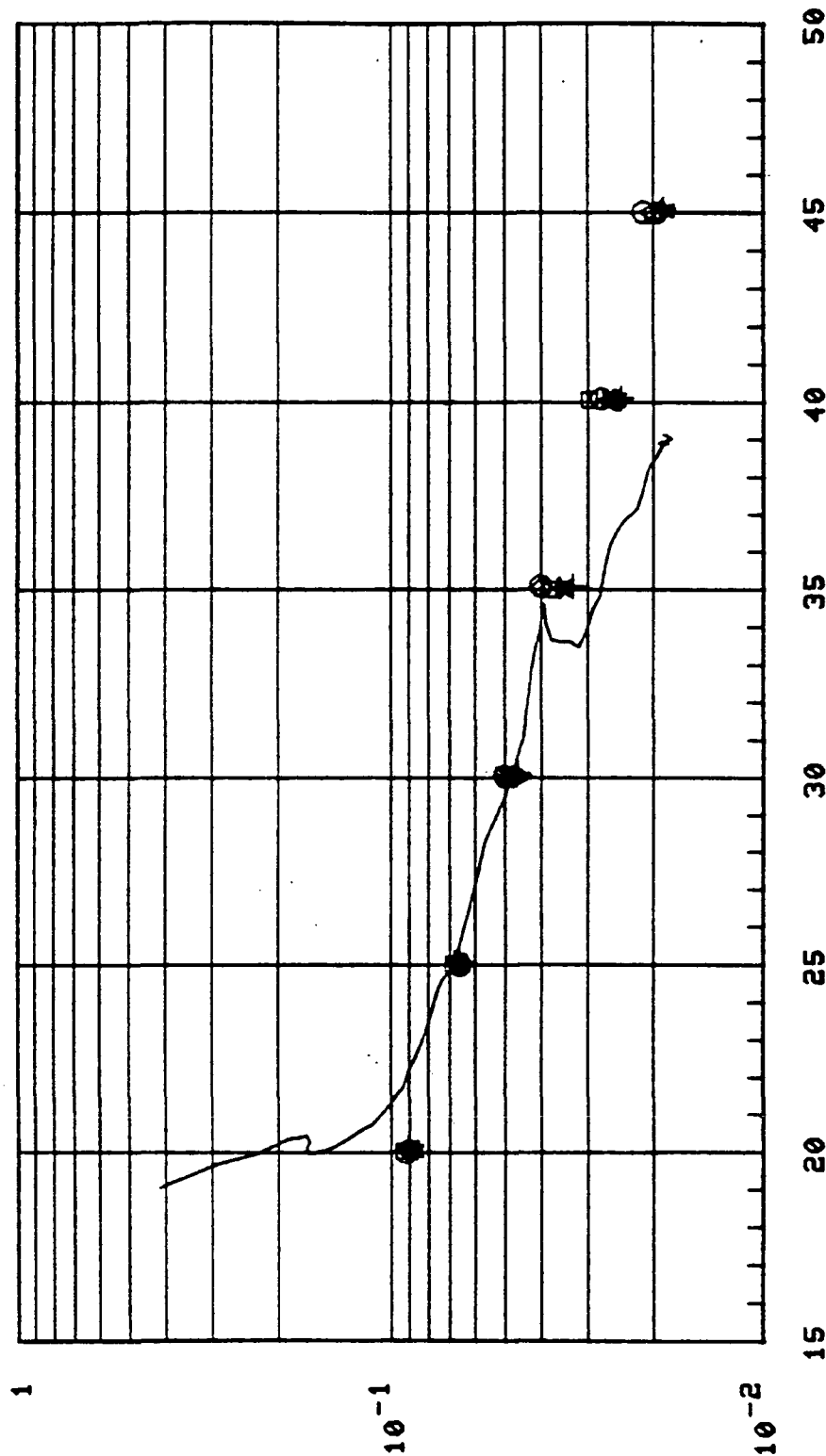
FLIGHT DATA

# STS-1 (107 FT LENGTH CL X/L-0.026) FLIGHT PARAMETER COMPARIS

007T9202A/H-REF 1065-1460 SEC

0H39 0.0175 SCALE RE - 0.5 E06  
 0H39 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H39 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

□ ◇ × △ +



FLIGHT PARAMETER COMPARIS

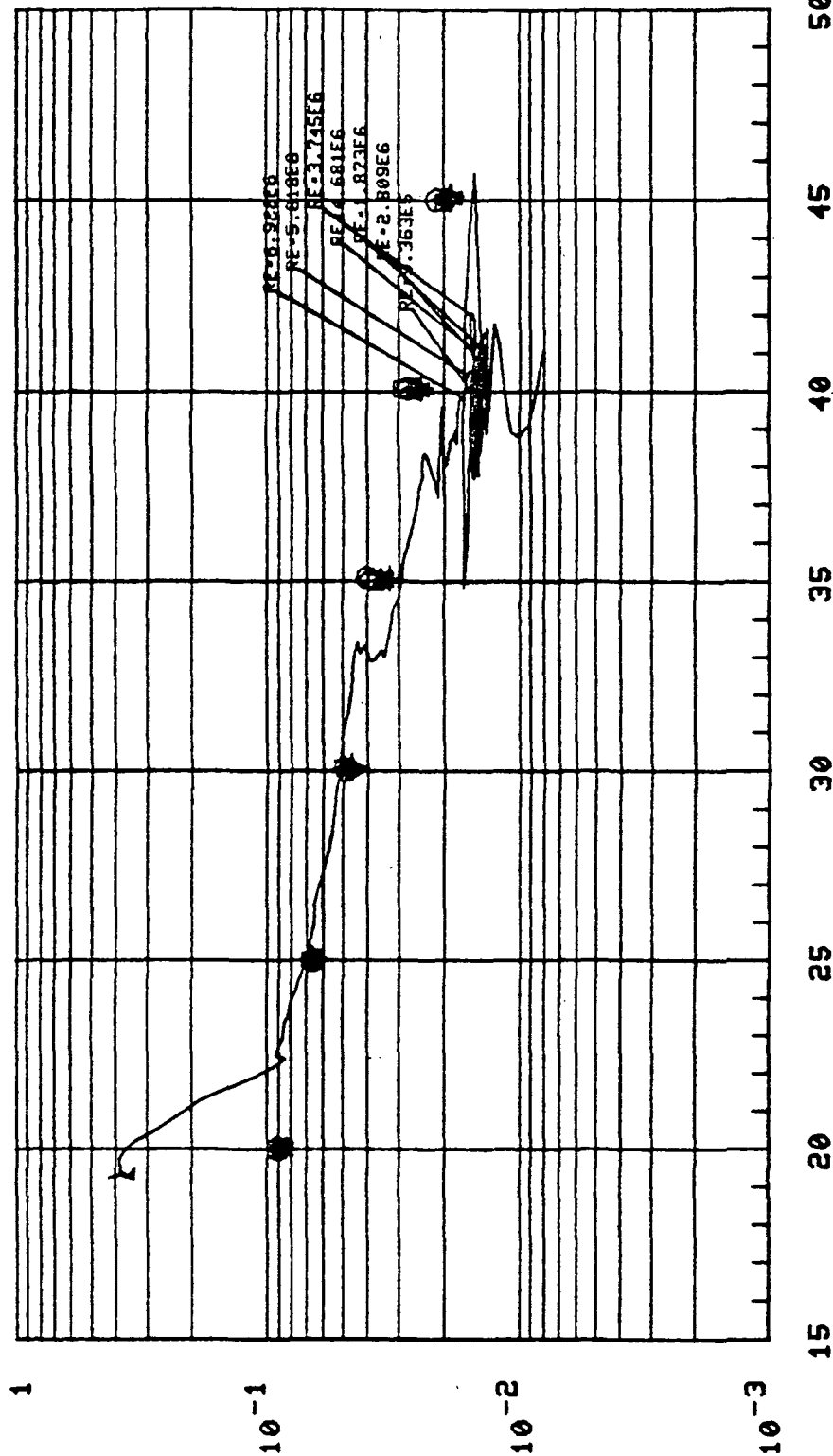


# STS-2 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

U07T98026/H-REF 200-1480 SEC

0H39 0.0175 SCALE RE - 0.5 E06  
 0H39 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H39 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

○ □ × +



06/18/84  
 BASE TIME - 8755036.000 SEC.

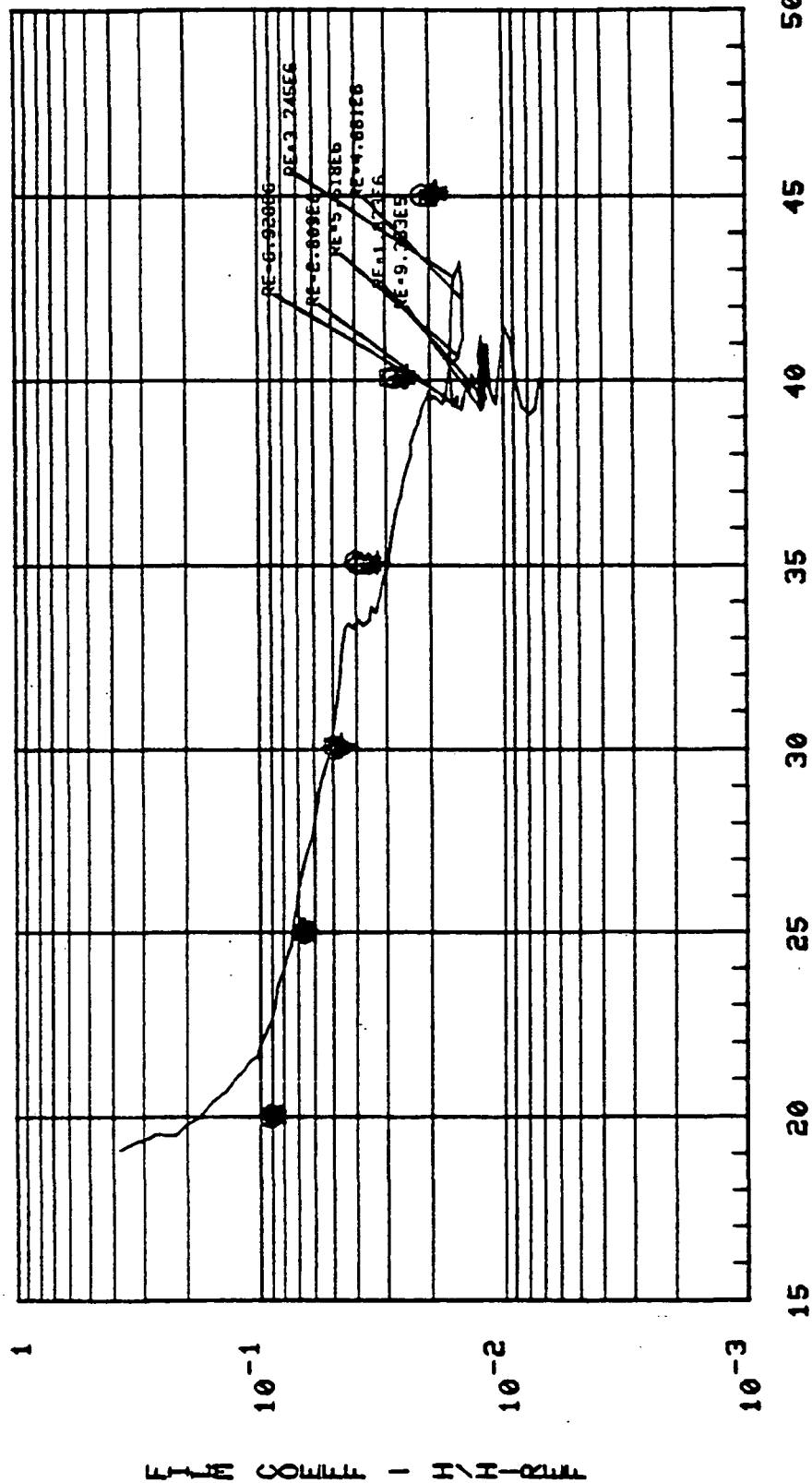
ANGLE-OF-ATTACK - DEG

# STS-3 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

U07T9802A/H-REF 200-1380 SEC

OH39 0.0175 SCALE RE - 0.5 E06  
 OH39 0.0175 SCALE RE - 1.0 E06  
 OH39 0.0175 SCALE RE - 1.5 E06  
 OH39 0.0175 SCALE RE - 2.0 E06  
 OH39 0.0175 SCALE RE - 2.5 E06  
 OH39 0.0175 SCALE RE - 3.0 E06  
 OH39 0.0175 SCALE RE - 3.7 E06

O  
 □  
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 X  
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 +



06/18/84  
 BASE TIME - 07745684.000 SEC.

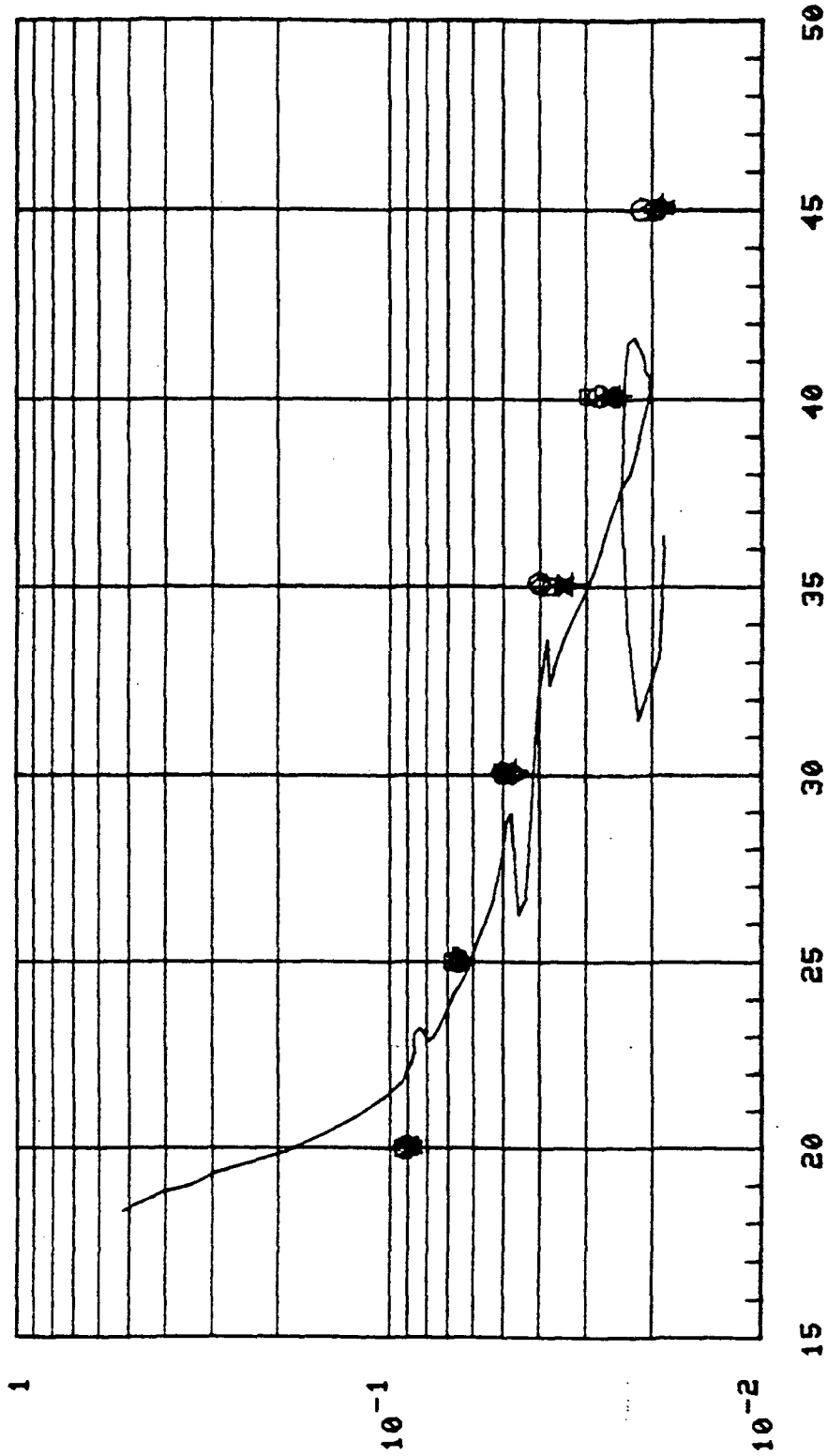
ANGLE-OF-ATTACK - DEG

# STS-4 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

U07T9802A/H-REF 965-1300 SEC

OH39 0.0175 SCALE RE - 0.5 E06  
 OH39 0.0175 SCALE RE - 1.0 E06  
 OH39 0.0175 SCALE RE - 1.5 E06  
 OH39 0.0175 SCALE RE - 2.0 E06  
 OH39 0.0175 SCALE RE - 2.5 E06  
 OH39 0.0175 SCALE RE - 3.0 E06  
 OH39 0.0175 SCALE RE - 3.7 E06

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 X  
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ANGLE-OF-ATTACK - DEG  
 BASE TIME - 16040423.000 SEC.  
 06/18/84

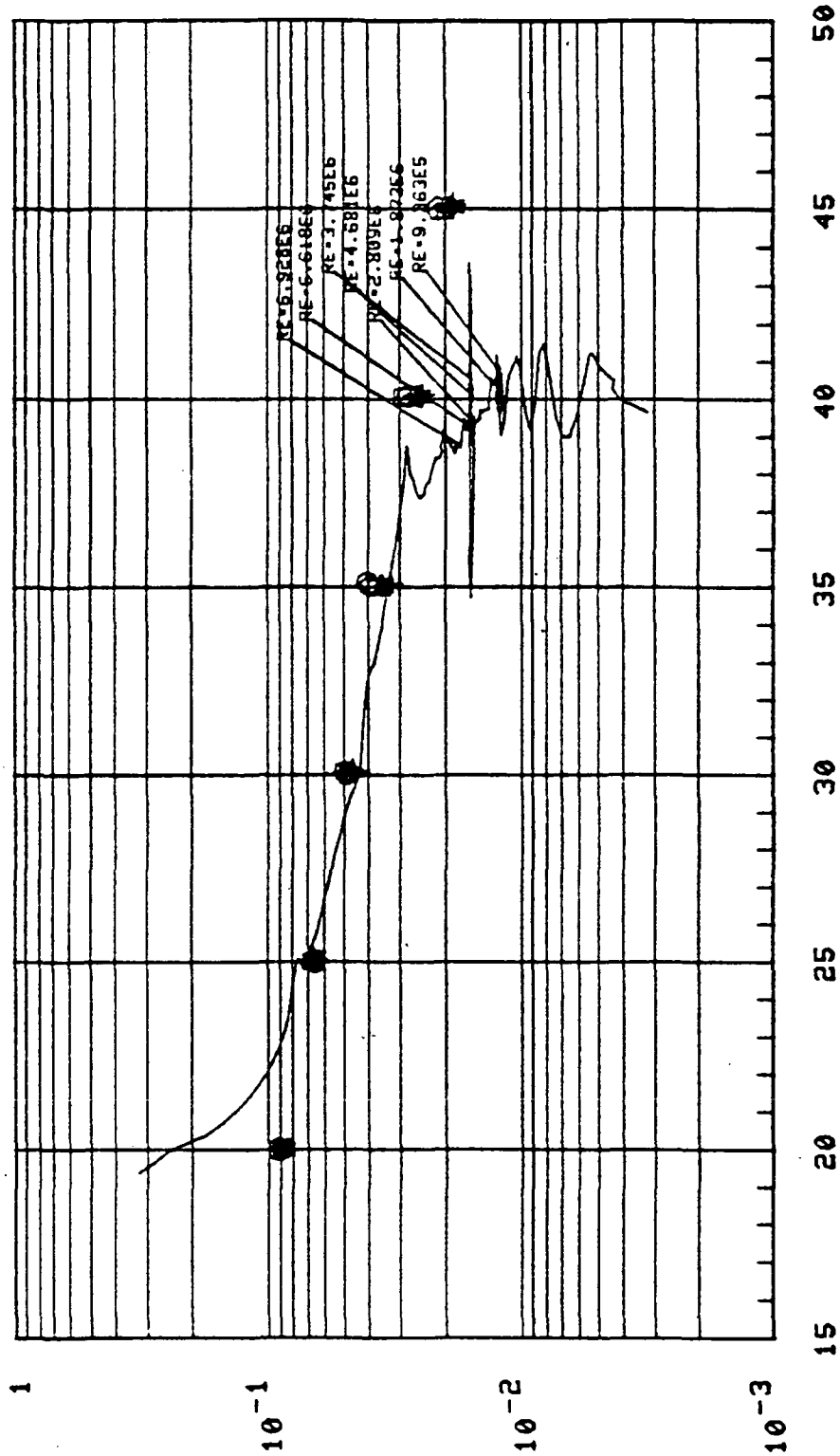
FILM COEFF - H/H-REF

# STS-5 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

U075802A/H-REF 150-1350 SEC

0H39 0.0175 SCALE RE - 0.5 E06  
 0H39 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H39 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

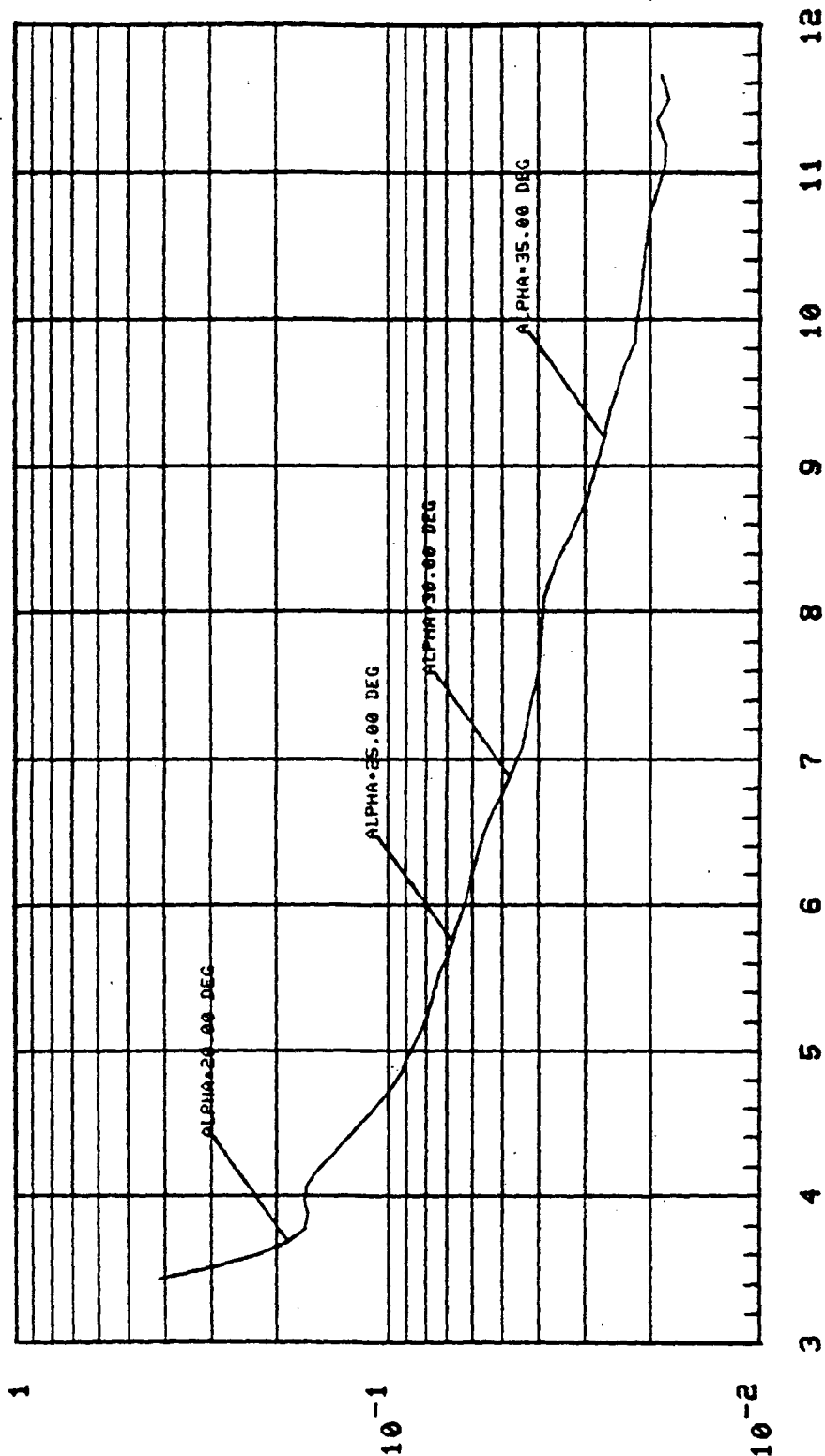
○ □ × △ +



FLIGHT PARAMETER COMPARIS

# STS-1 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

U07T98024/H-REF 1065-1460 SEC



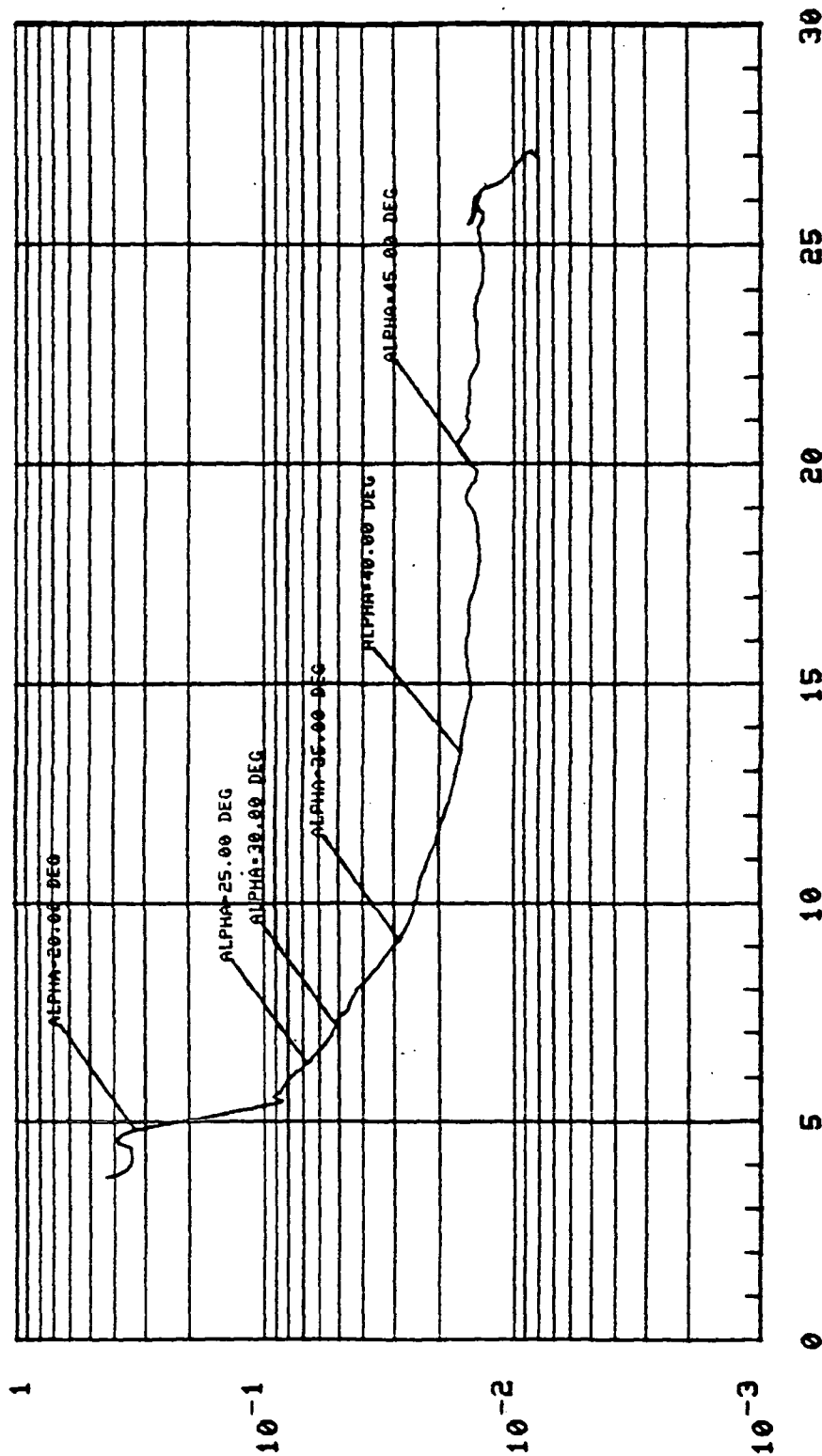
06/18/84  
BASE TIME - 09049744.000 SEC.

MACH NUMBER

U07T98024/H-REF 1065-1460 SEC

# STS-2 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

U07T9802A/H-REF 200-1480 SEC



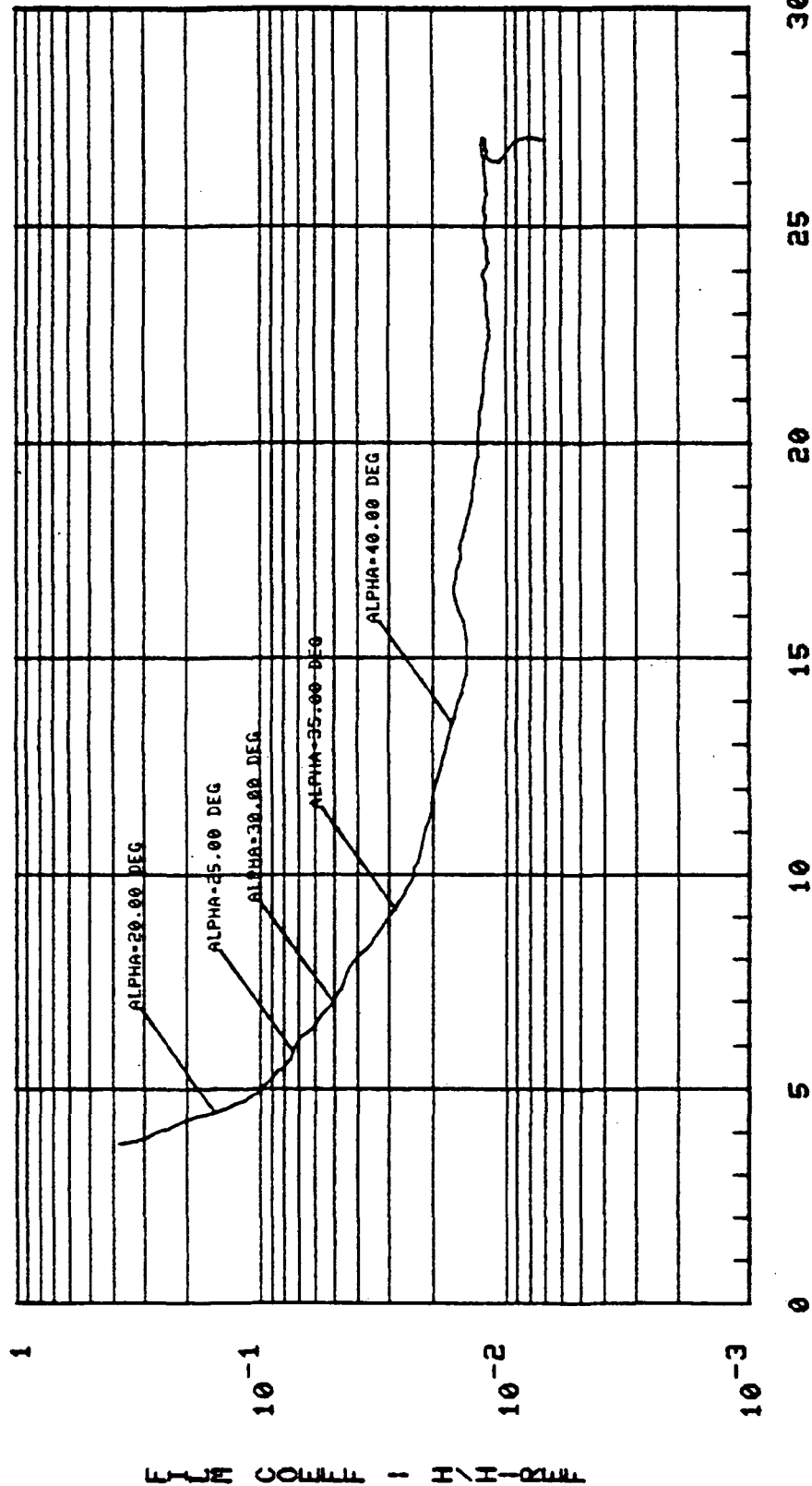
06/18/84  
BASE TIME - 27550236.000 SEC.

MACH NUMBER

FLIGHT COEFF - H/H-REF

# STS-3 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

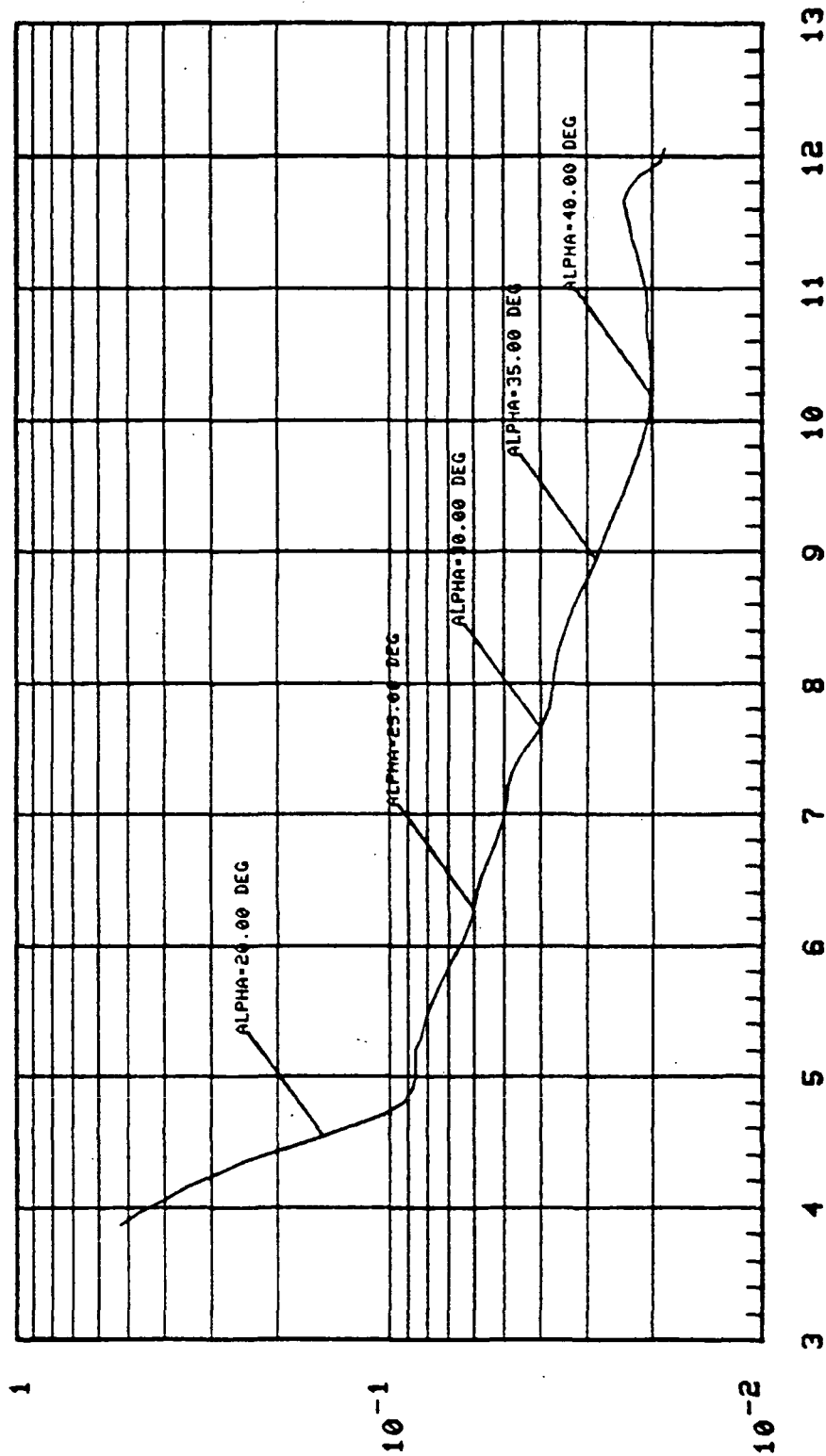
U07T98024/H-REF 200-1380 SEC



MACH NUMBER  
06/18/84  
BASE TIME - 07745584.000 SEC.

# STS-4 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

U07T9802A/H-REF 965-1300 SEC

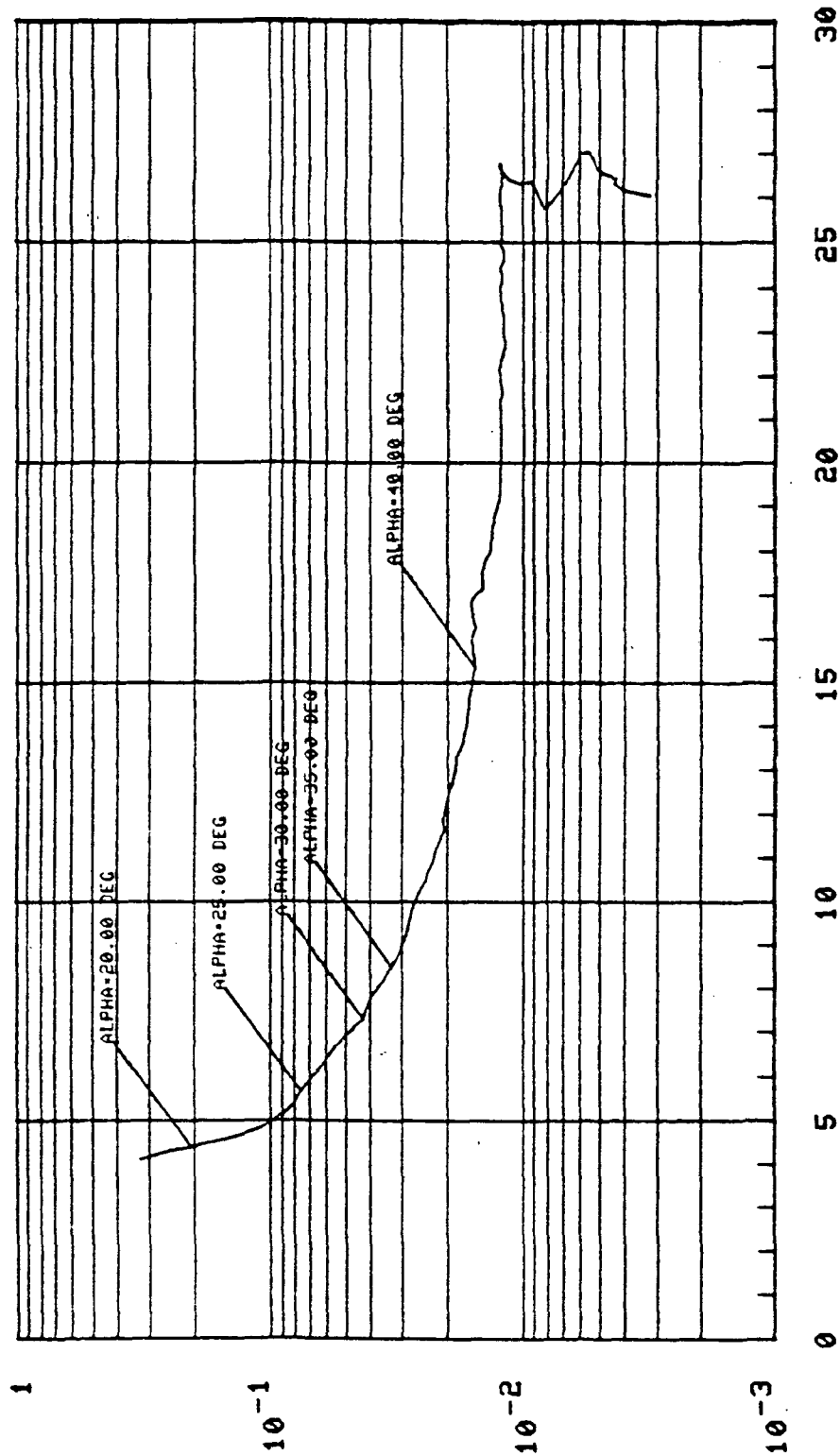


U07T9802A/H-REF



# STS-5 (107 FT LENGTH CL X/L-0.026) FLIGHT PARAMETER COMPARIS

U07T9802A/H-PEF 150-1350 SEC



MACH NUMBER  
BASE TIME • 27608591.000 SEC.  
06/19/84

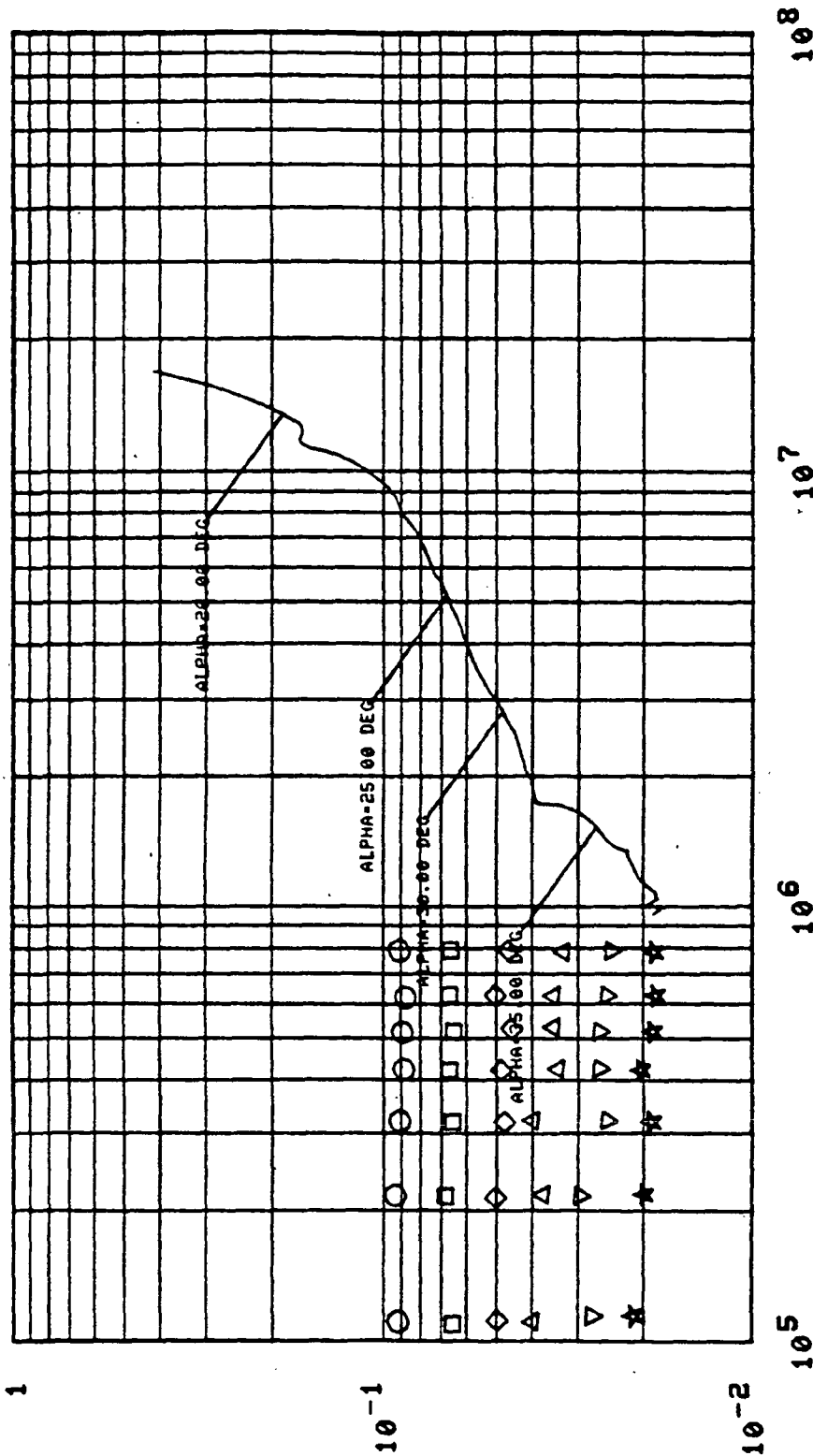
FLIGHT COMPARE - H/H-REF

# STS-1 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

U07T9802A/H-REF 1065-1460 SEC

- QH39 ALPHA - 20 DEGREES
- QH39 ALPHA - 25 DEGREES
- QH39 ALPHA - 30 DEGREES
- QH39 ALPHA - 35 DEGREES
- QH39 ALPHA - 40 DEGREES
- QH39 ALPHA - 45 DEGREES

○ □ ◇ △ ★



CL H-REF

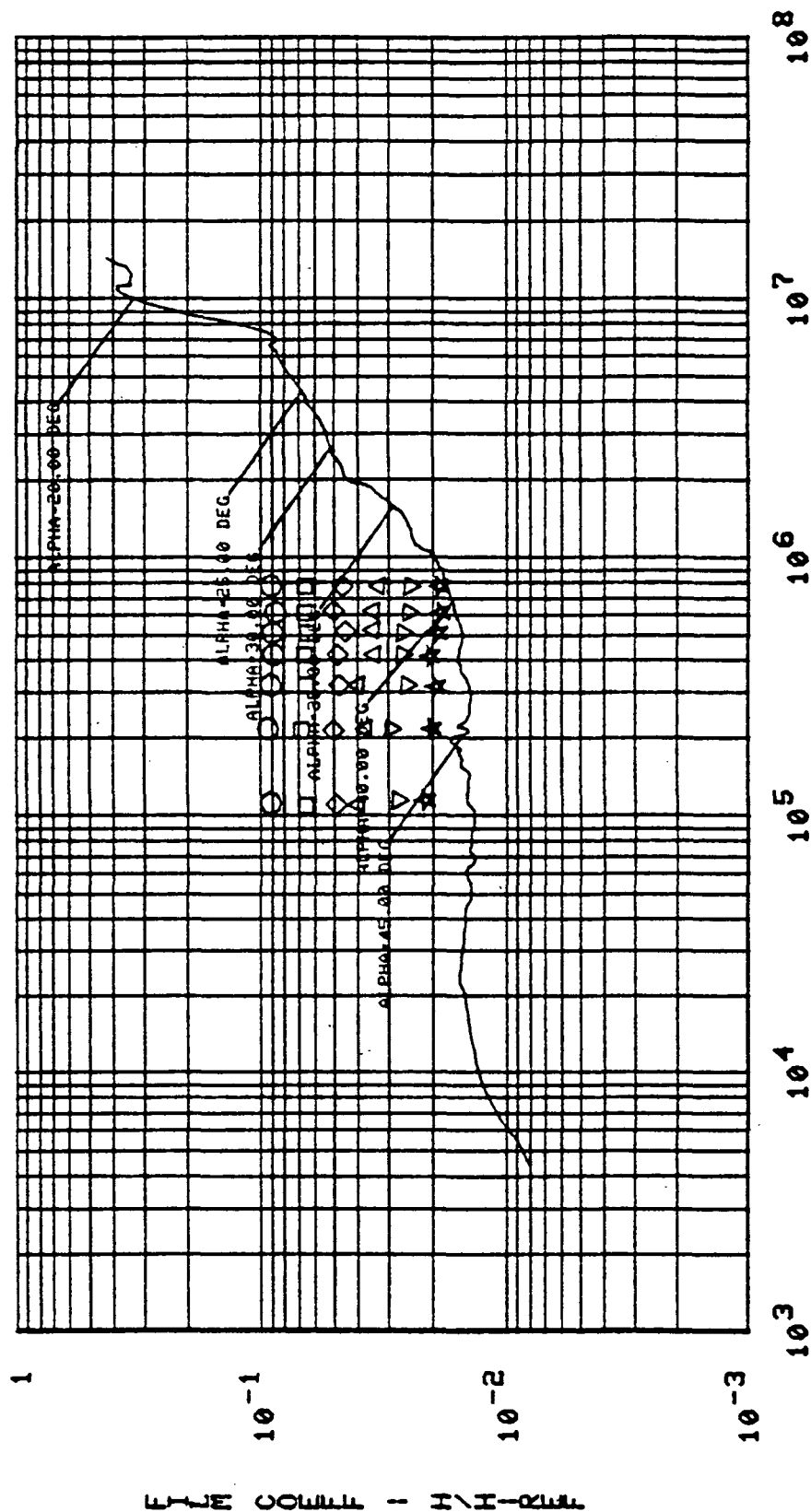
REYNOLDS NUMBER (NS) 06/18/84 BASE TIME - 00049744.000 SEC.

# STS-2 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

- 0H39 ALPHA - 20 DEGREES
- 0H39 ALPHA - 25 DEGREES
- 0H39 ALPHA - 30 DEGREES
- 0H39 ALPHA - 35 DEGREES
- 0H39 ALPHA - 40 DEGREES
- 0H39 ALPHA - 45 DEGREES

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U07T98024/H-REF 200-1480 SEC



REYNOLDS NUMBER (NS)

06/18/84

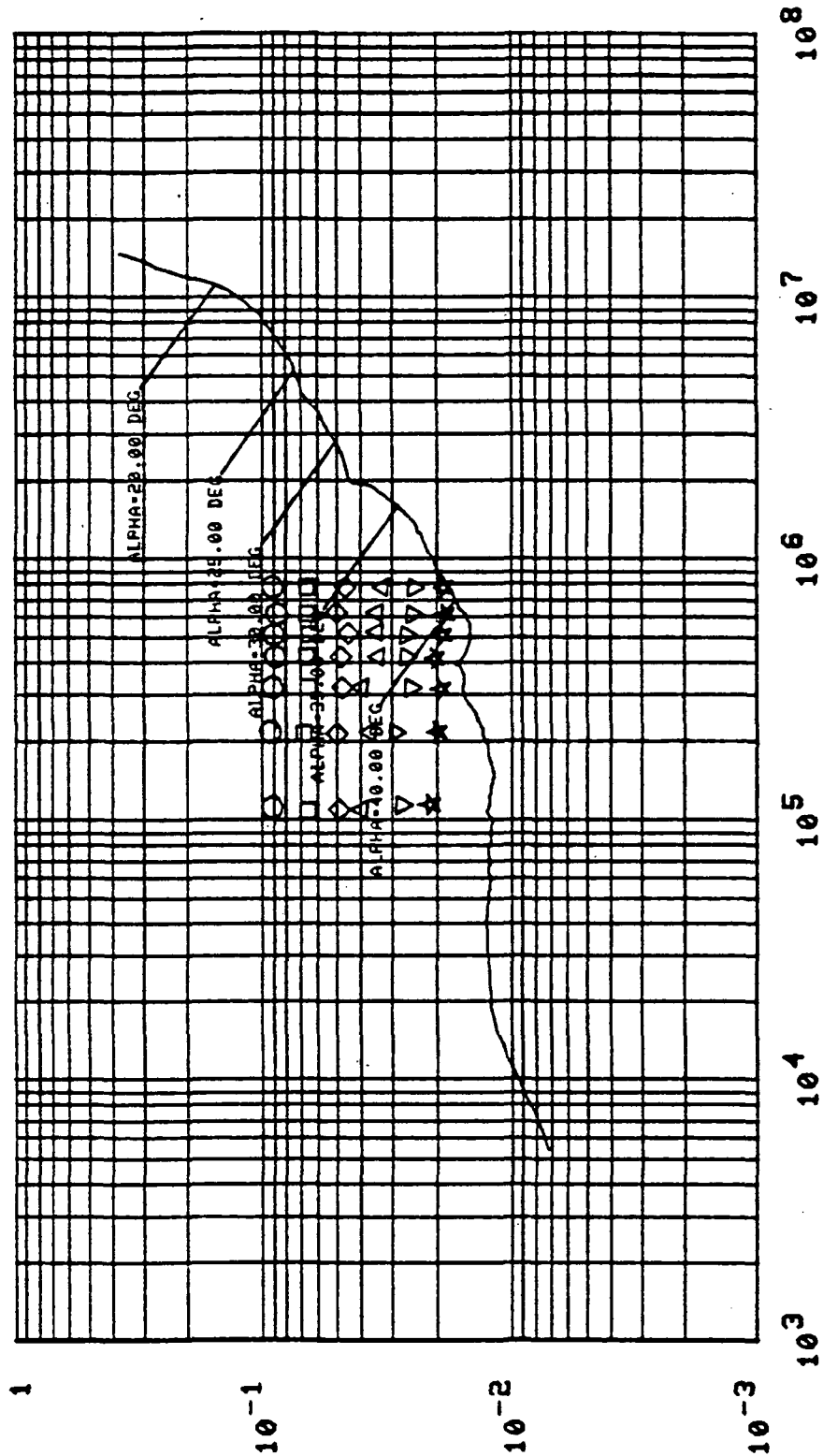
BASE TIME - 27550236.000 SEC.

# STS-3 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

U07T9802A/H-REF 200-1380 SEC

- 0H39 ALPHA - 20 DEGREES
- 0H39 ALPHA - 25 DEGREES
- 0H39 ALPHA - 30 DEGREES
- 0H39 ALPHA - 35 DEGREES
- 0H39 ALPHA - 40 DEGREES
- 0H39 ALPHA - 45 DEGREES

○ □ △ ×



FILE COMPAR - H/H-REF

REYNOLDS NUMBER (NS)

BASE TIME - 07745684.000 SEC.

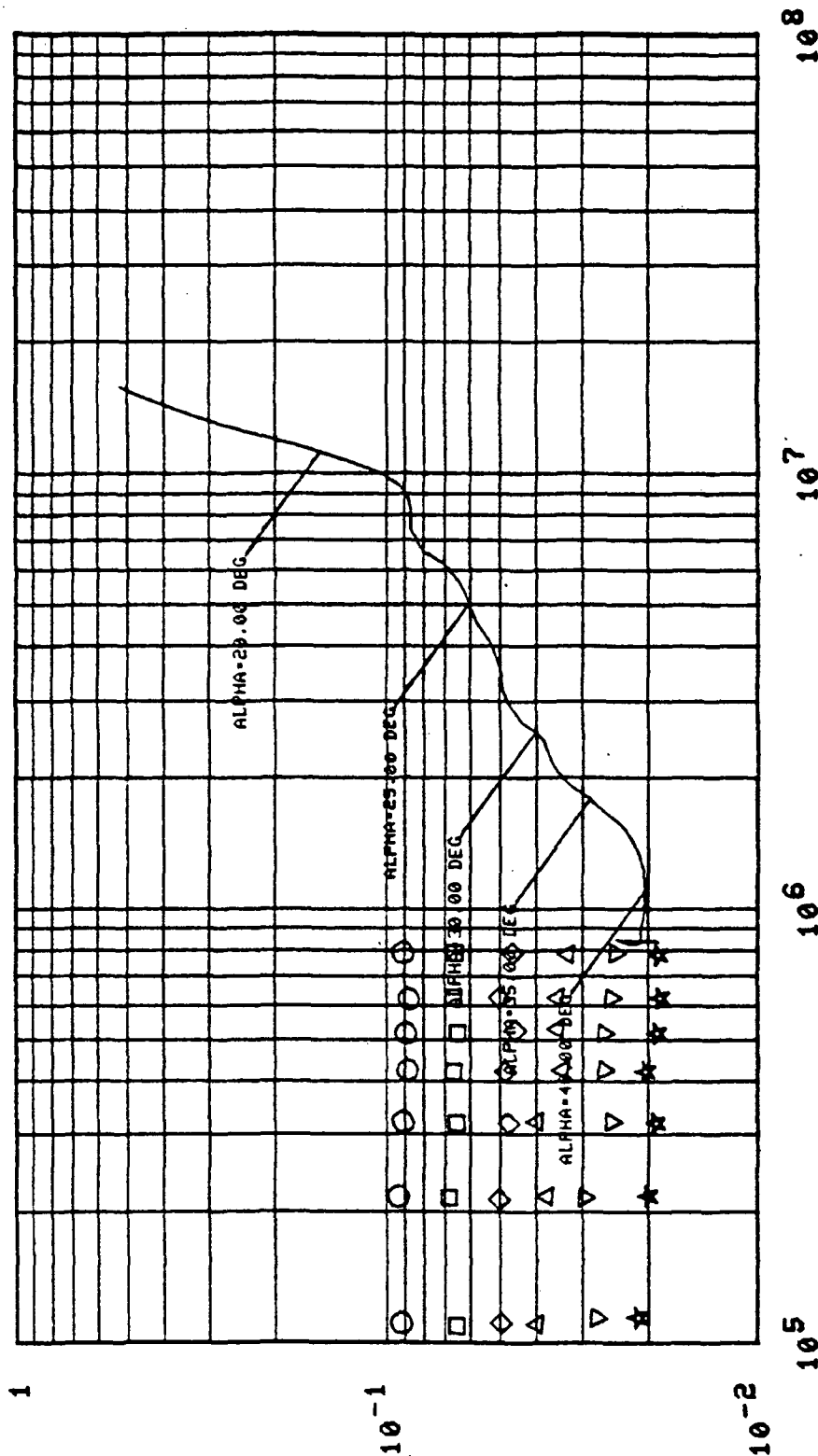
06/18/84

# STS-4 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

007T98024/H-REF 965-1300 SEC

- 0H39 ALPHA - 20 DEGREES
- 0H39 ALPHA - 25 DEGREES
- 0H39 ALPHA - 30 DEGREES
- 0H39 ALPHA - 35 DEGREES
- 0H39 ALPHA - 40 DEGREES
- 0H39 ALPHA - 45 DEGREES

○ □ △ ★



007T98024/H-REF

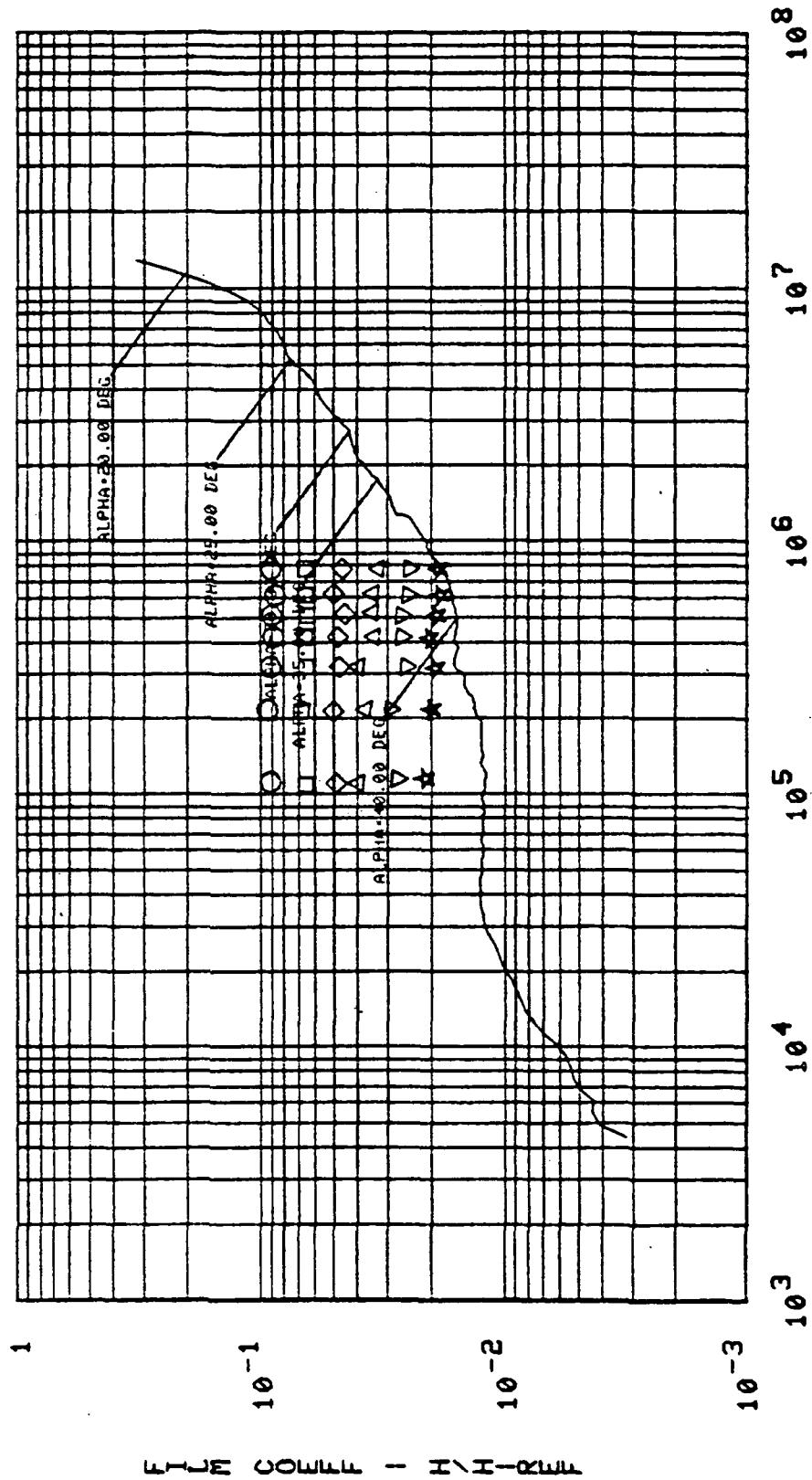
REYNOLDS NUMBER (NS) 06/18/84 BASE TIME - 16040423.000 SEC.

# STS-5 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

OH39 ALPHA - 20 DEGREES  
 OH39 ALPHA - 25 DEGREES  
 OH39 ALPHA - 30 DEGREES  
 OH39 ALPHA - 35 DEGREES  
 OH39 ALPHA - 40 DEGREES  
 OH39 ALPHA - 45 DEGREES

U07T98024/H-REF 150-1350 SEC

○ □ ◇ × ★

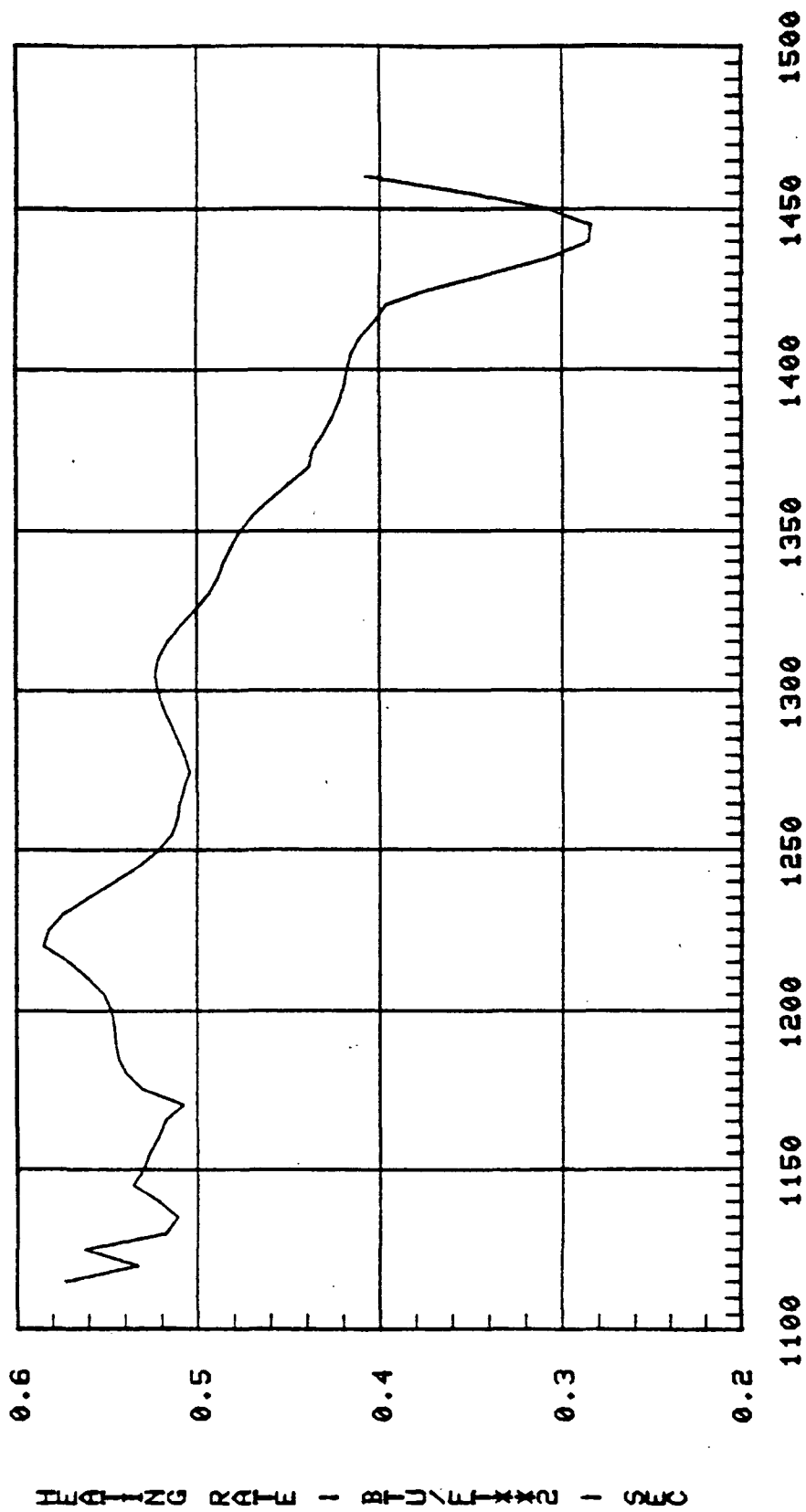


05/19/84  
BASE TIME - 27698591.000 SEC.

REYNOLDS NUMBER (NS)

# STS-1 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

U07T98024

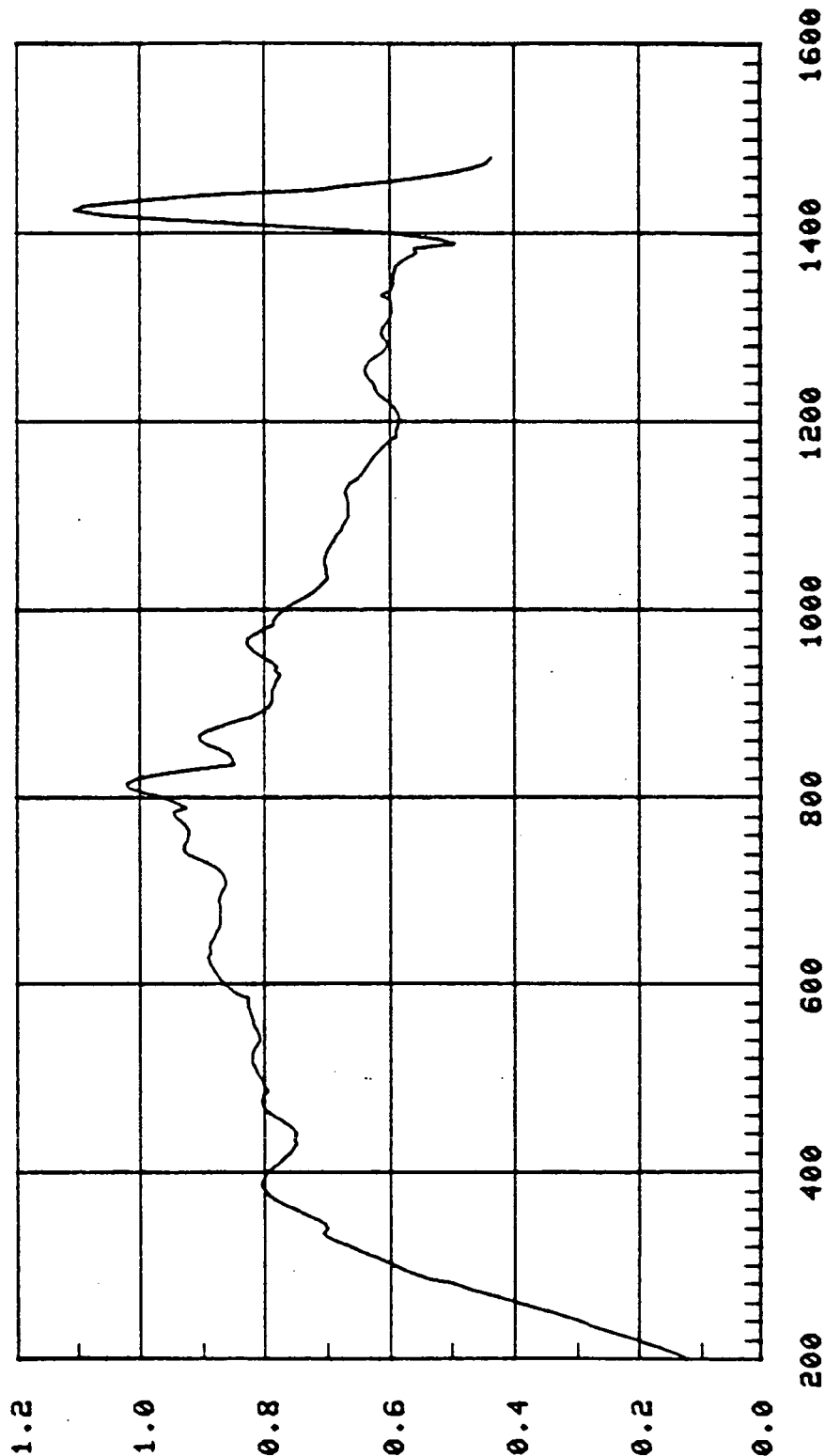


TIME - SECONDS

06/18/84

# STS-2 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

U07T98024



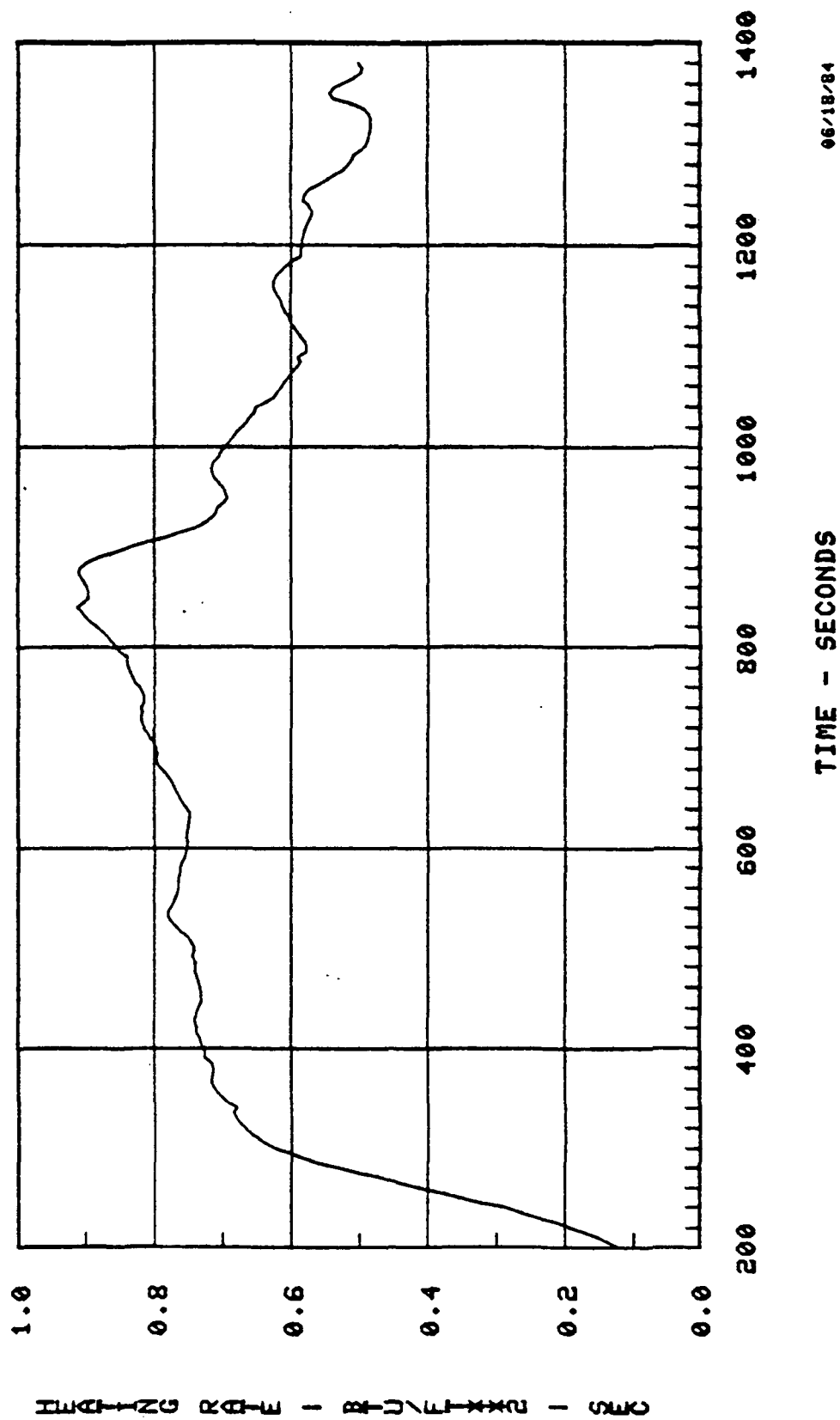
TIME - SECONDS

05/18/84



# STS-3 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

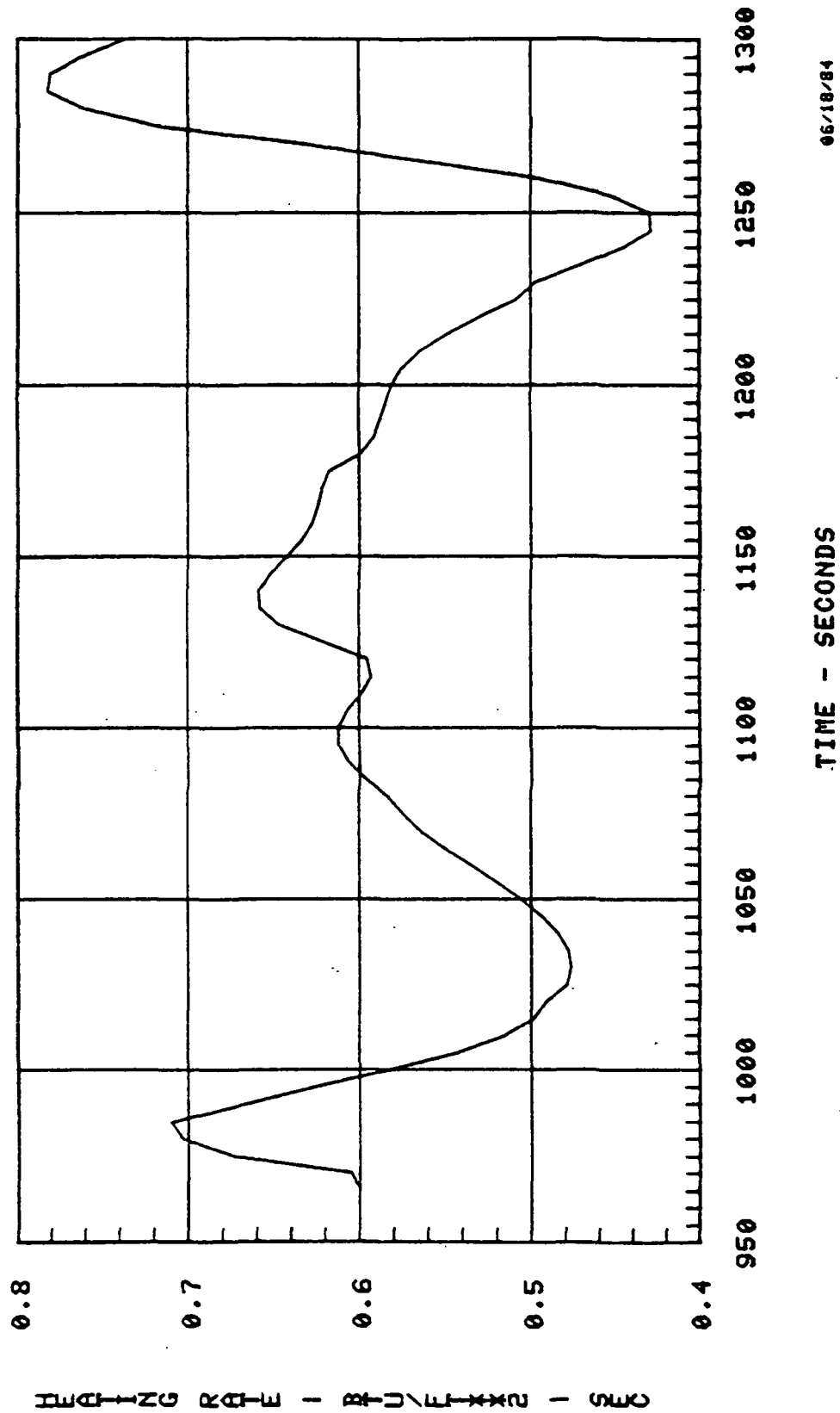
U07T98024



06/18/84

# STS-4 (107 FT LENGTH CL $X/L=0.026$ ) FLIGHT PARAMETER COMPARIS

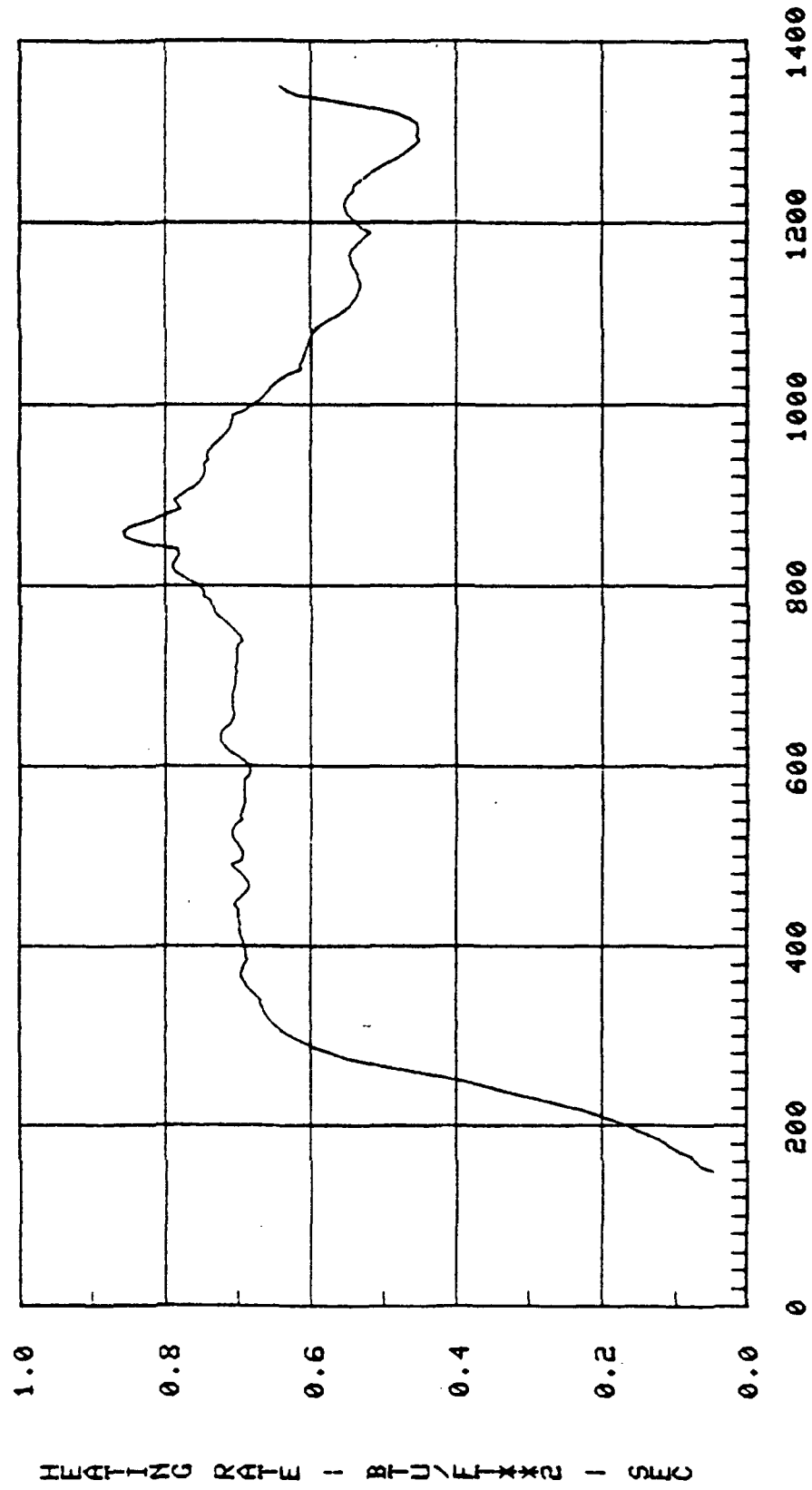
U07T9802A



06/18/84

# STS-5 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

U07T9502A

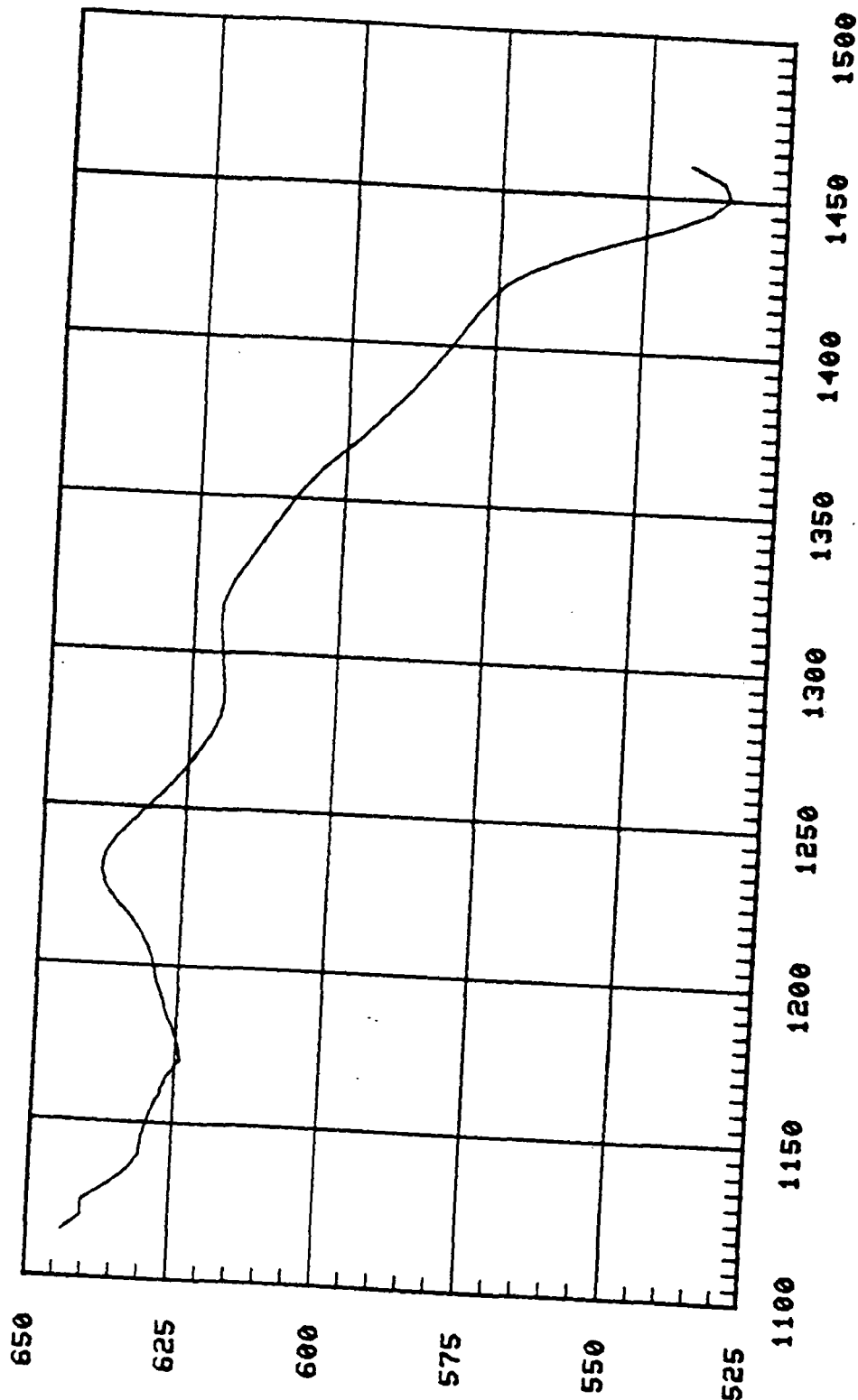


TIME - SECONDS

06/19/84

STS-1 (107 FT LENGTH CL  $X/L=0.026$ ) FLIGHT PARAMETER COMPARIS

U07T9802A



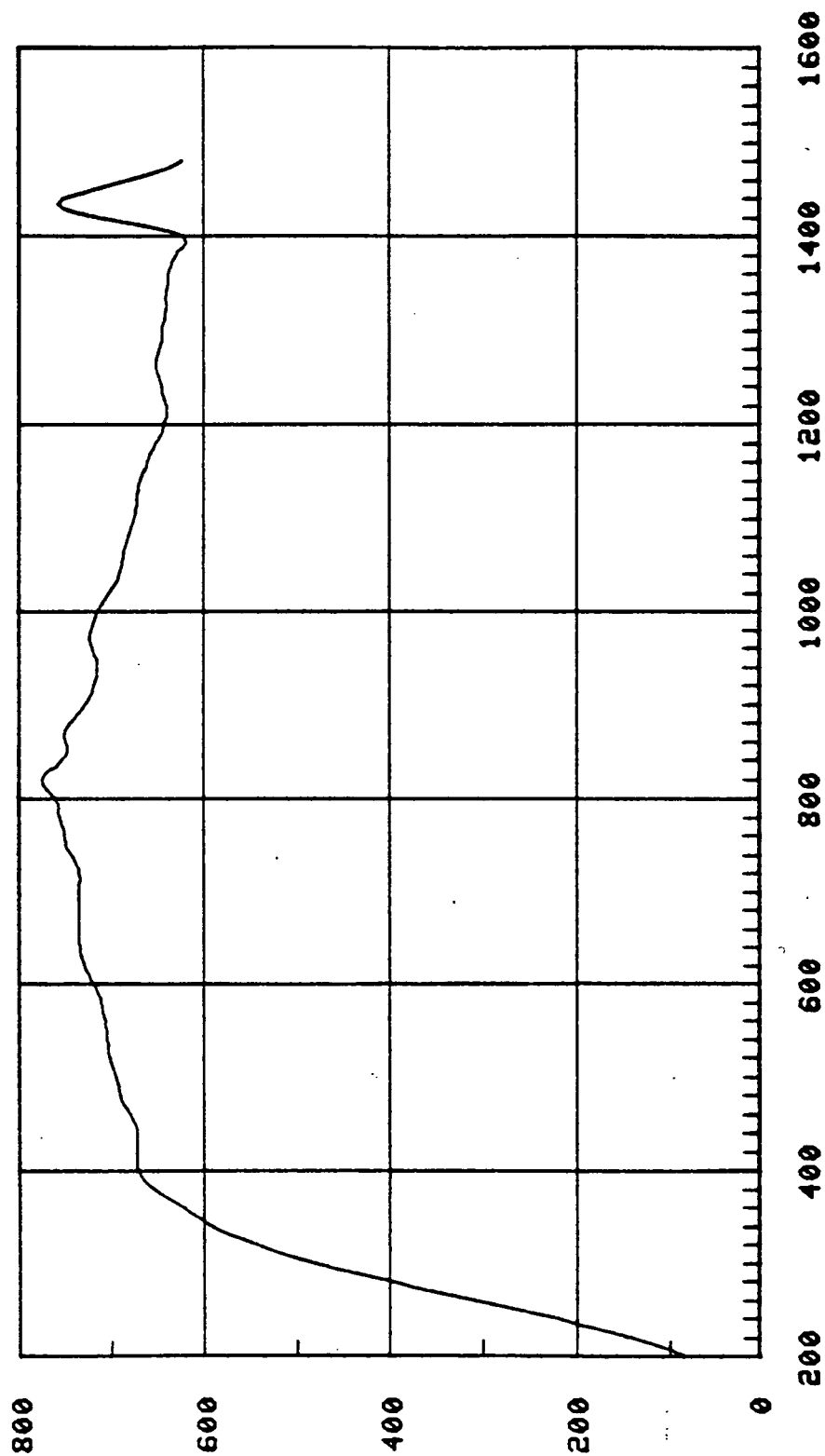
TIME - SECONDS

06/18/84

PERIOD - SECONDS

# STS-2 (107 FT LENGTH CL $X/L=0.026$ ) FLIGHT PARAMETER COMPARIS

U07T9802A



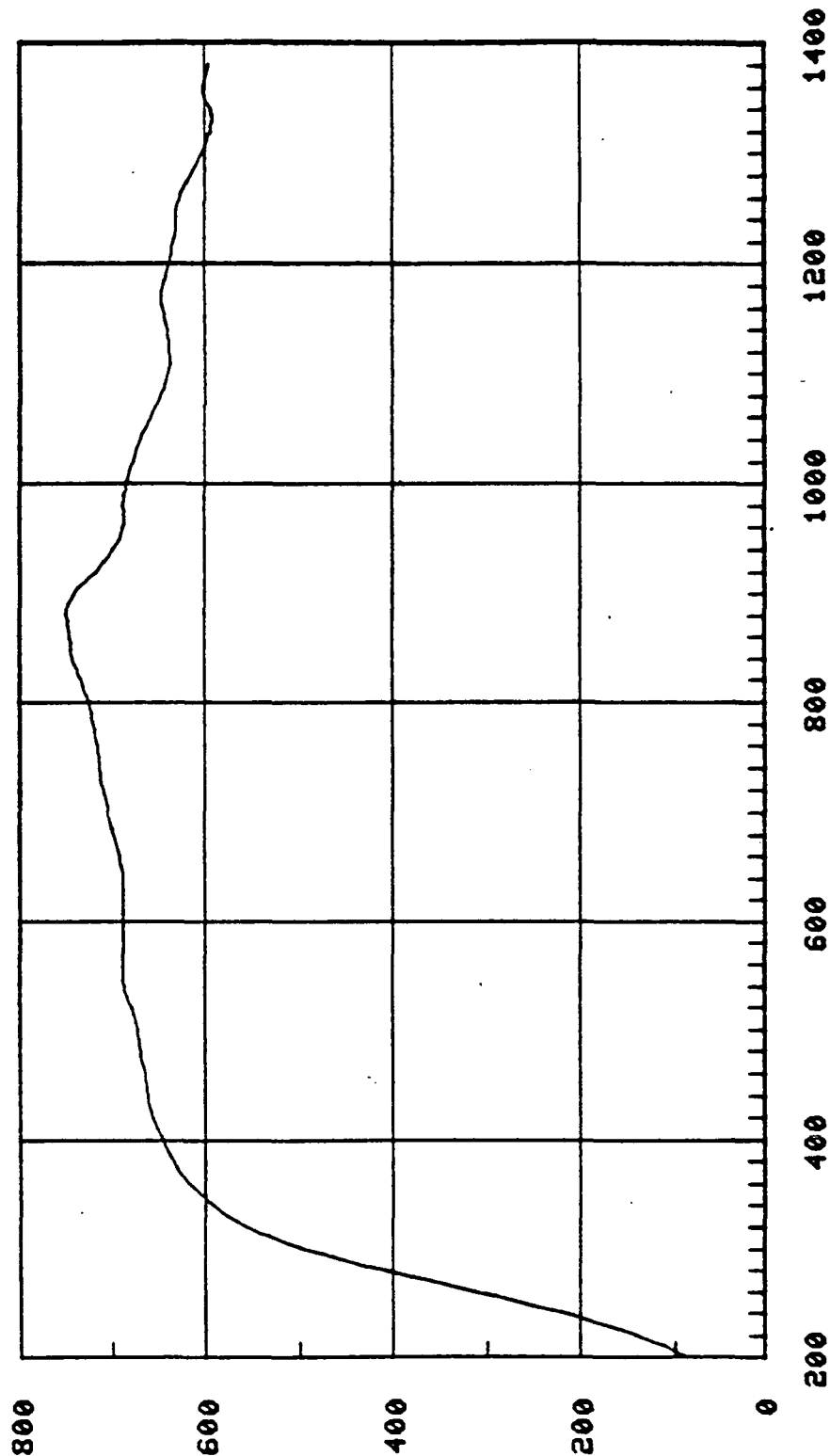
TIME - SECONDS

06/18/84

F - PROX-DISTANCE

# STS-3 (107 FT LENGTH CL X/L-0.026) FLIGHT PARAMETER COMPARIS

U07T9802A

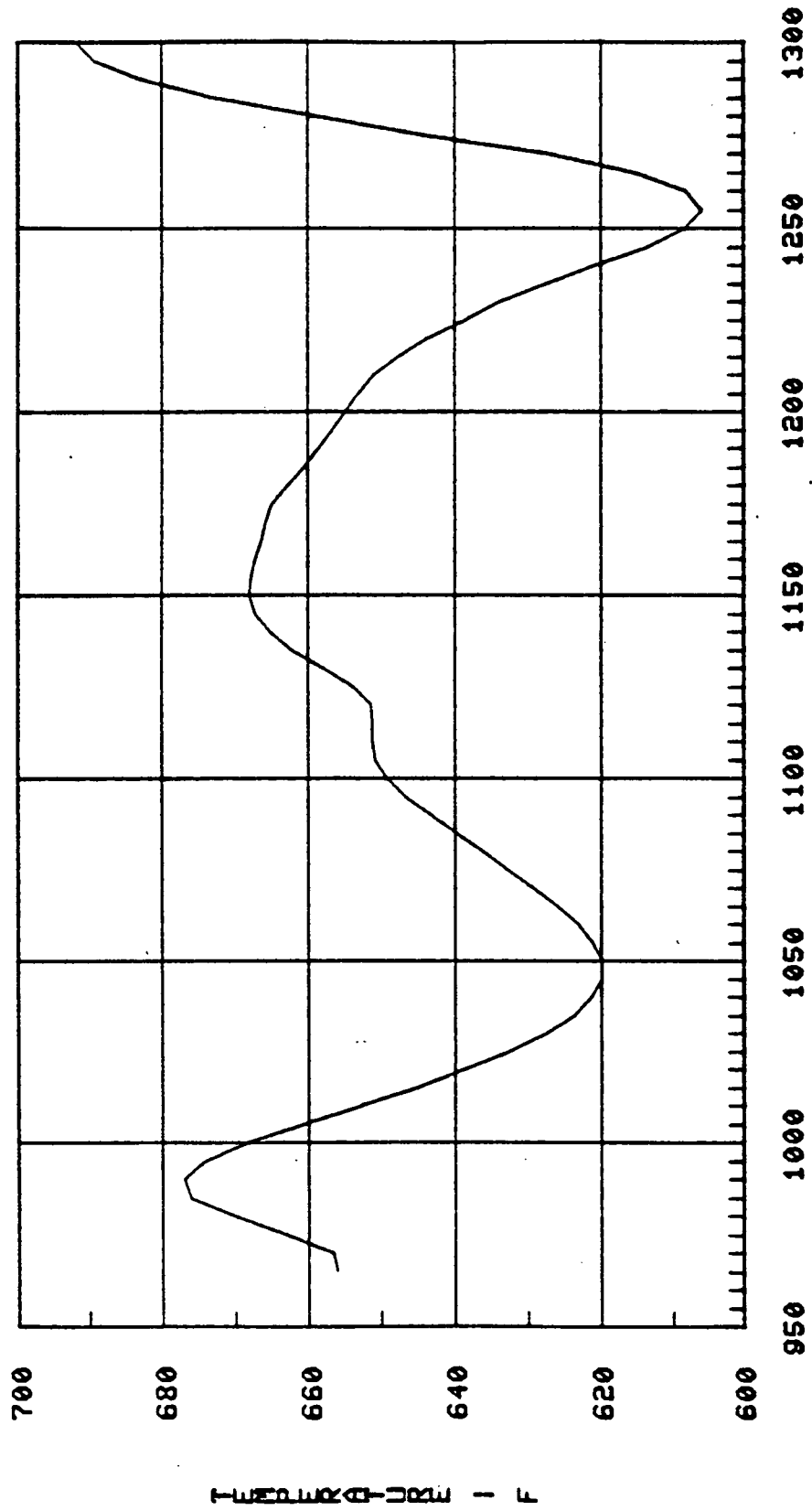


TIME - SECONDS

06/18/84

# STS-4 (107 FT LENGTH CL X/L=0.026) FLIGHT PARAMETER COMPARIS

U07TS802A

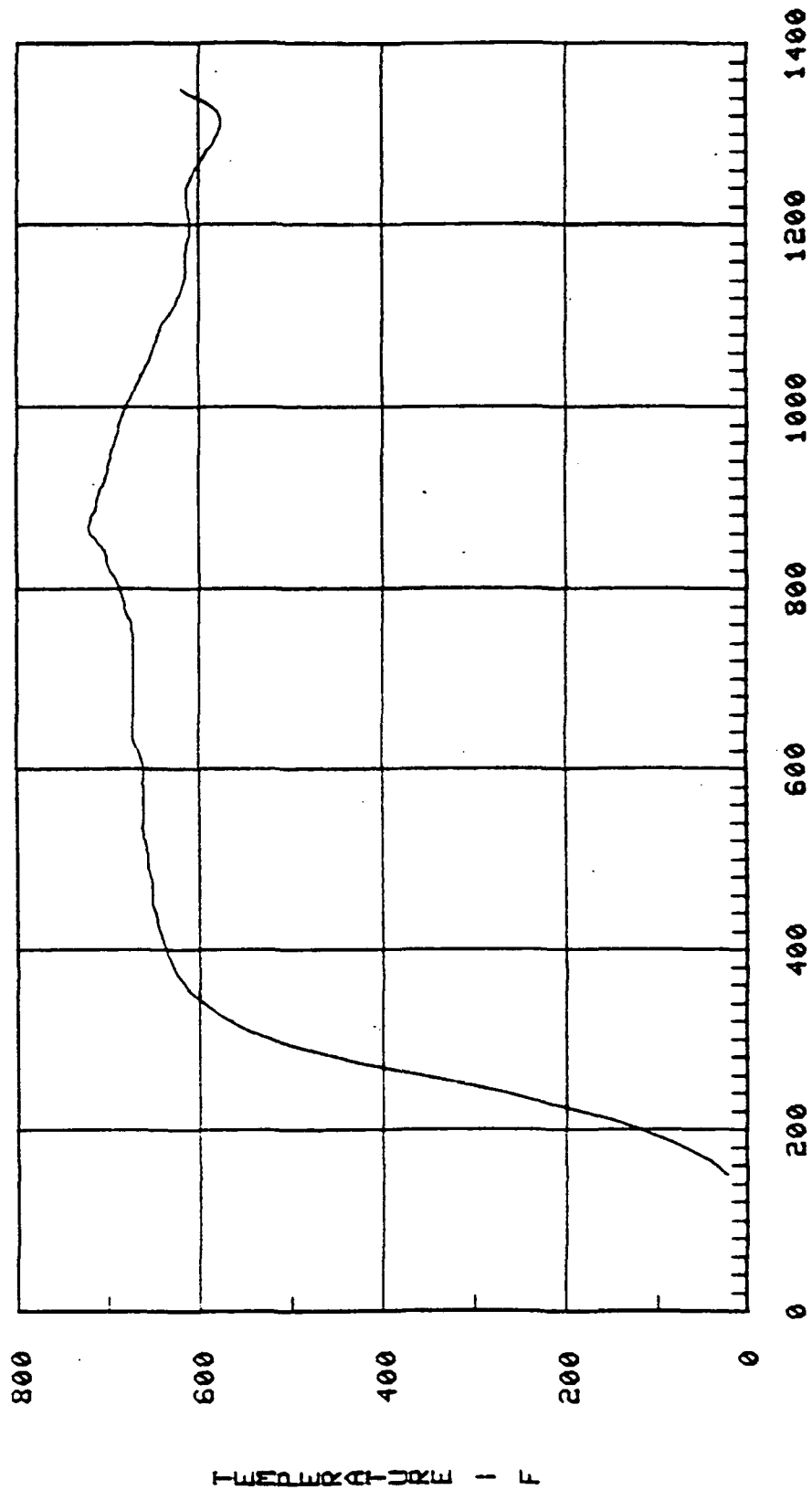


TIME - SECONDS

06/18/84

# STS-5 (107 FT LENGTH CL $X/L=0.026$ ) FLIGHT PARAMETER COMPARIS

U37T92024



TIME - SECONDS

06/19/84

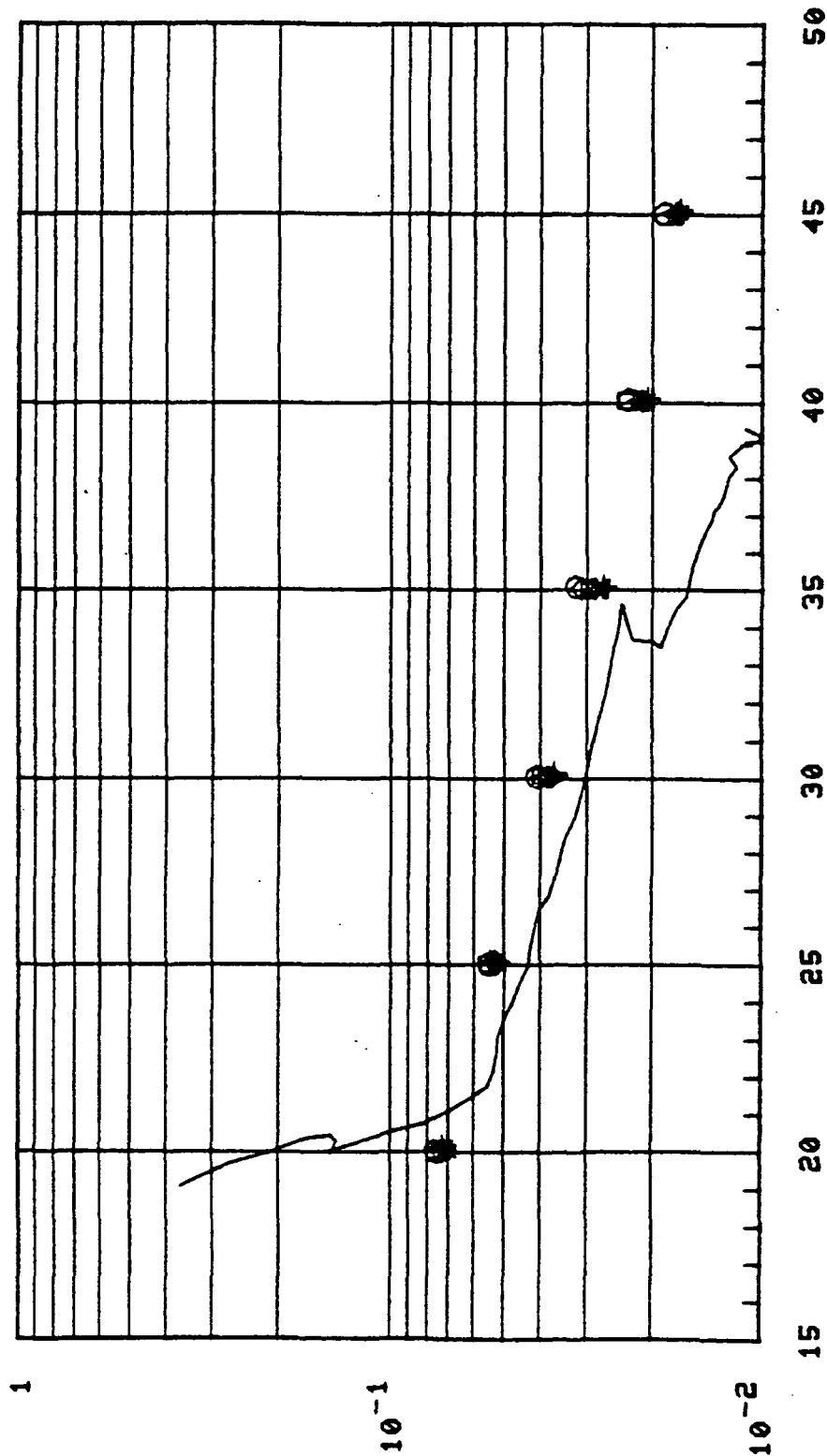


# STS-1 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

U07T3804R/H-REF 1065-1460 SEC

OH39 0.0175 SCALE RE - 0.5 E06  
 OH39 0.0175 SCALE RE - 1.0 E06  
 OH39 0.0175 SCALE RE - 1.5 E06  
 OH39 0.0175 SCALE RE - 2.0 E06  
 OH39 0.0175 SCALE RE - 2.5 E06  
 OH39 0.0175 SCALE RE - 3.0 E06  
 OH39 0.0175 SCALE RE - 3.7 E06

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 X  
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FLIGHT COMPARE - H/H-REF

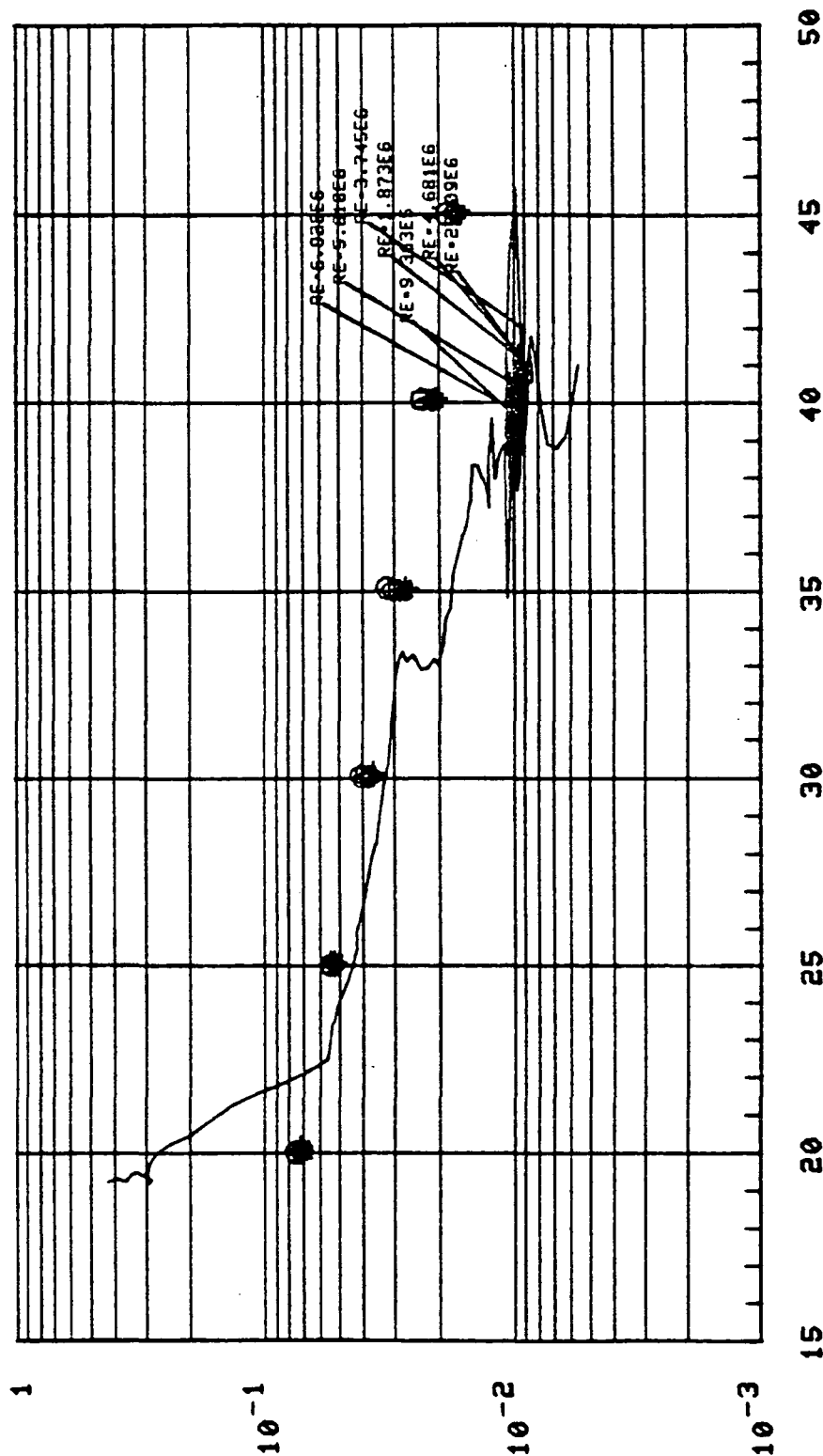
06/18/84  
 BASE TIME - 09048744.000 SEC.

# STS-2 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

U07T9804A/H-REF 200-1480 SEC

0H39 0.0175 SCALE RE - 0.5 E06  
 0H39 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H39 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

□ ◇ × ★ +



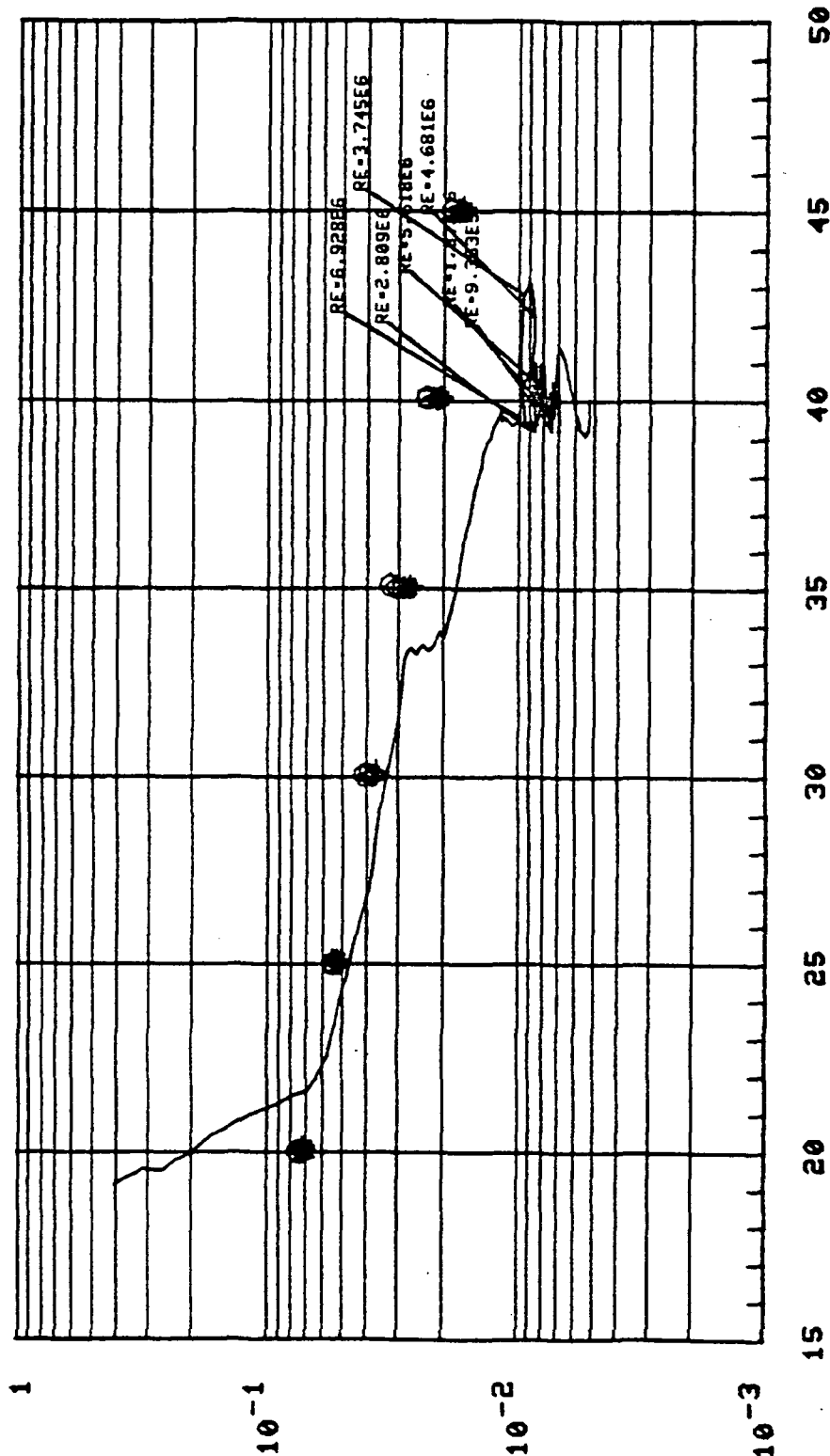
CL H-REF

# STS-3 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

U07T9804A/H-REF 200-1380 SEC

OH39 0.0175 SCALE RE - 0.5 E06  
 OH39 0.0175 SCALE RE - 1.0 E06  
 OH39 0.0175 SCALE RE - 1.5 E06  
 OH39 0.0175 SCALE RE - 2.0 E06  
 OH39 0.0175 SCALE RE - 2.5 E06  
 OH39 0.0175 SCALE RE - 3.0 E06  
 OH39 0.0175 SCALE RE - 3.7 E06

○ □ ◇ △ ★  
 +

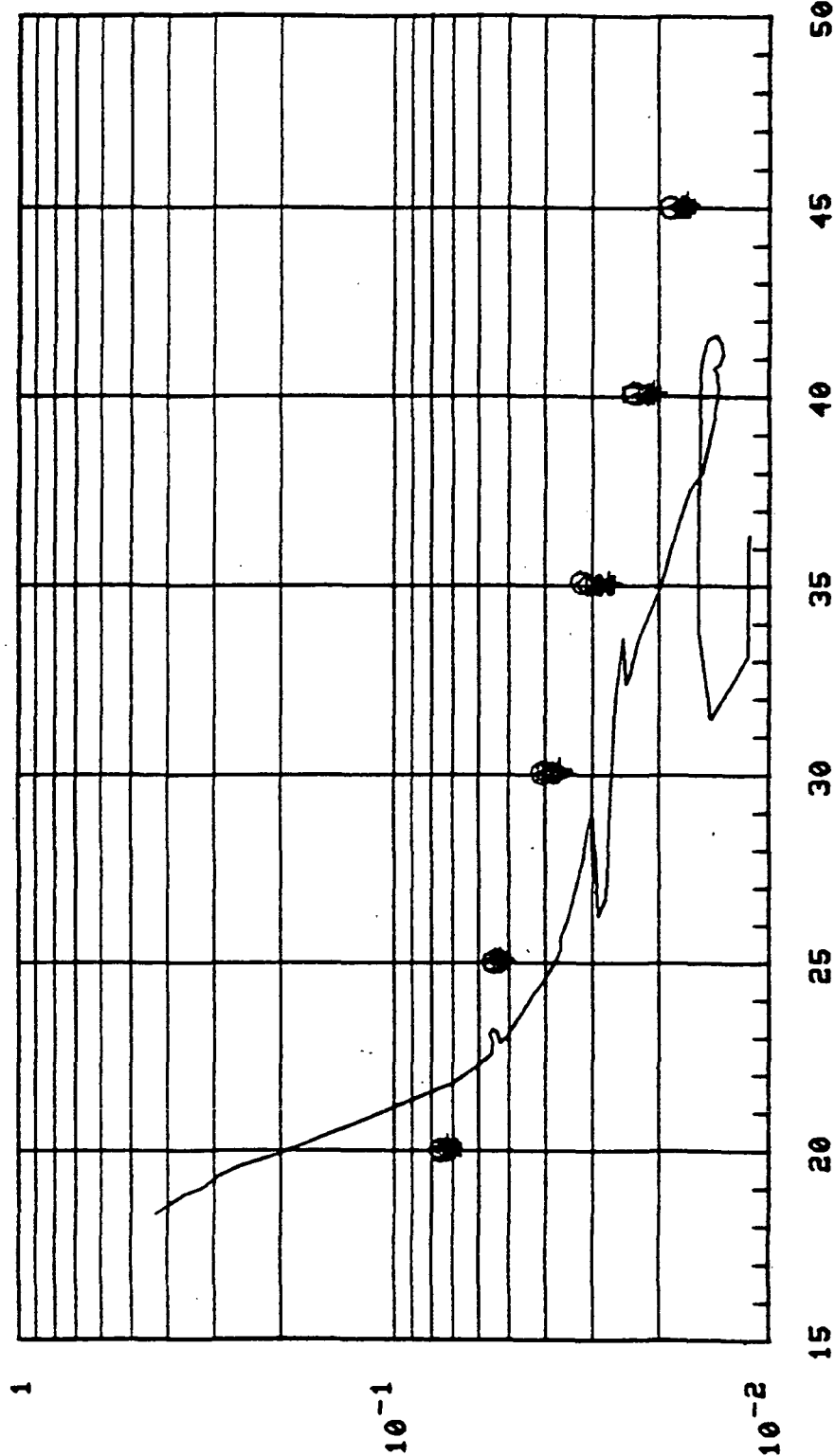


ANGLE-OF-ATTACK - DEG  
 BASE TIME - 07745684.000 SEC.  
 06/18/84

# STS-4 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

O 0H39 0.0175 SCALE RE - 0.5 E06  
 □ 0H39 0.0175 SCALE RE - 1.0 E06  
 X 0H39 0.0175 SCALE RE - 1.5 E06  
 Δ 0H39 0.0175 SCALE RE - 2.0 E06  
 ∇ 0H39 0.0175 SCALE RE - 2.5 E06  
 + 0H39 0.0175 SCALE RE - 3.0 E06  
 \* 0H39 0.0175 SCALE RE - 3.7 E06

U07T9804H/H-REF 965-1300 SEC



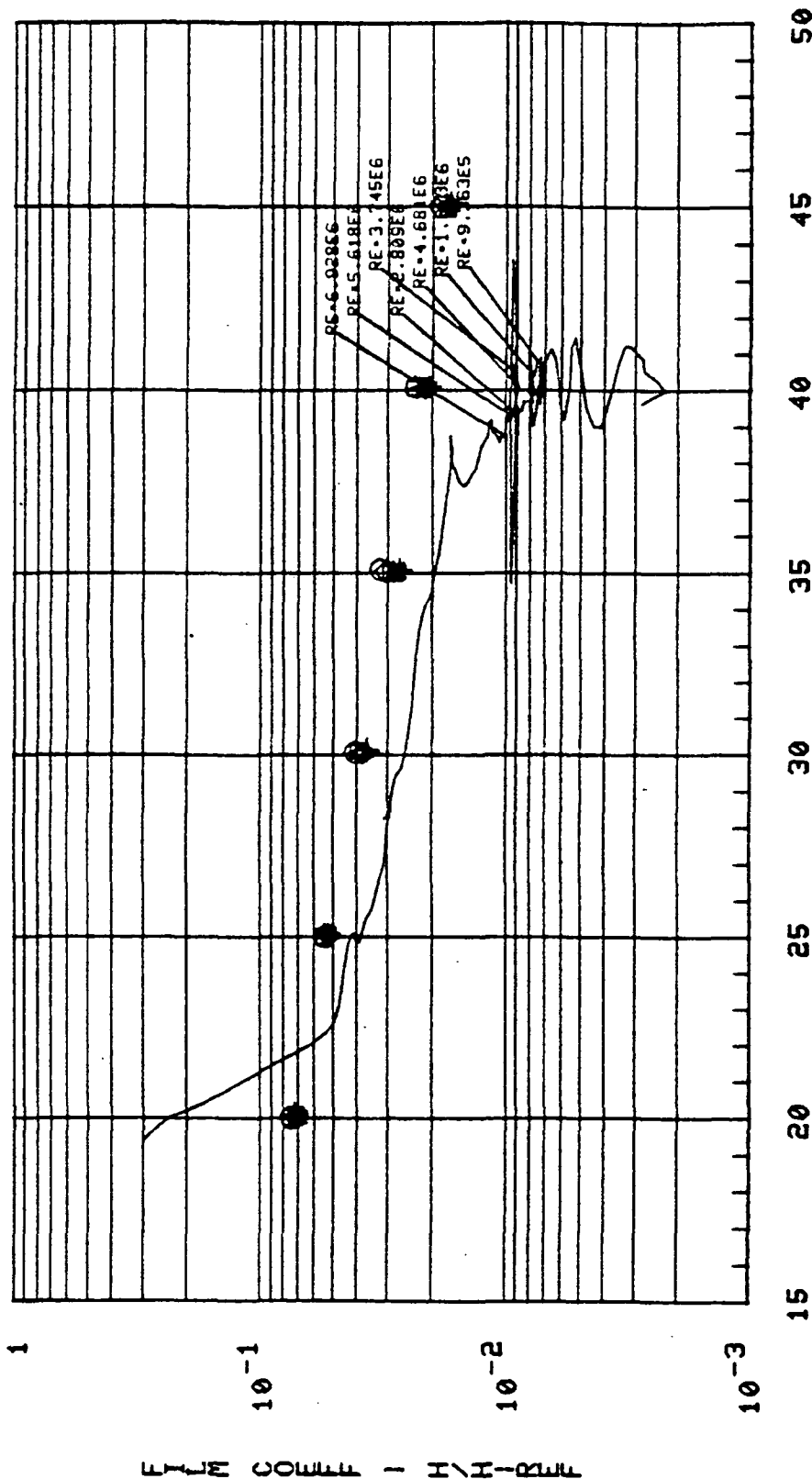
FLIGHT PARAMETER COMPARIS

# STS-5 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

U07T98044/H-REF 150-1350 SEC

- 0H39 0.0175 SCALE RE - 0.5 E06
- 0H39 0.0175 SCALE RE - 1.0 E06
- 0H39 0.0175 SCALE RE - 1.5 E06
- 0H39 0.0175 SCALE RE - 2.0 E06
- 0H39 0.0175 SCALE RE - 2.5 E06
- 0H39 0.0175 SCALE RE - 3.0 E06
- 0H39 0.0175 SCALE RE - 3.7 E06

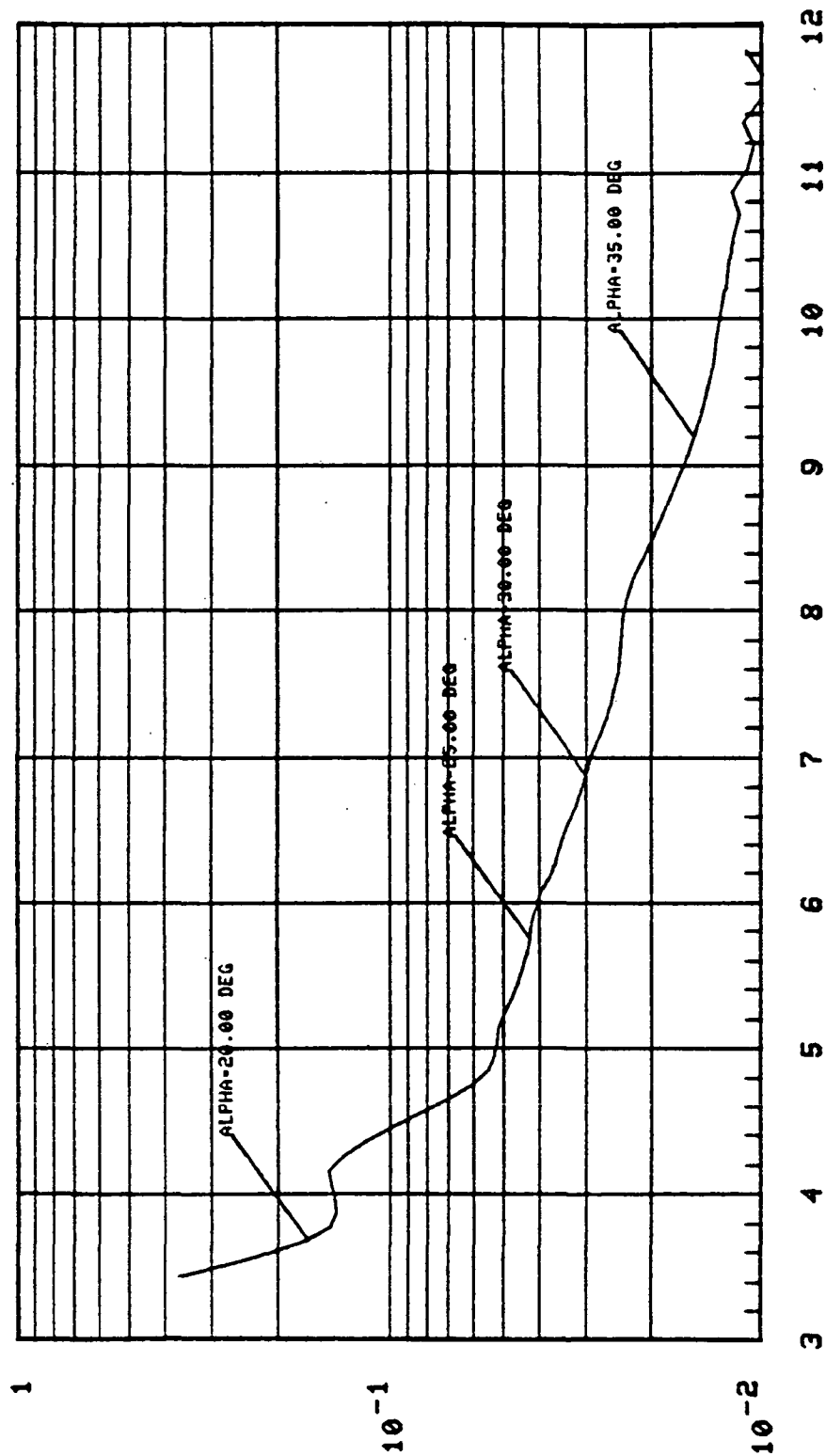
○ × △ +



ANGLE-OF-ATTACK - DEG  
BASE TIME - 27698591.000 SEC.  
06/19/84

# STS-1 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

U07T9804A/H-REF 1065-1460 SEC

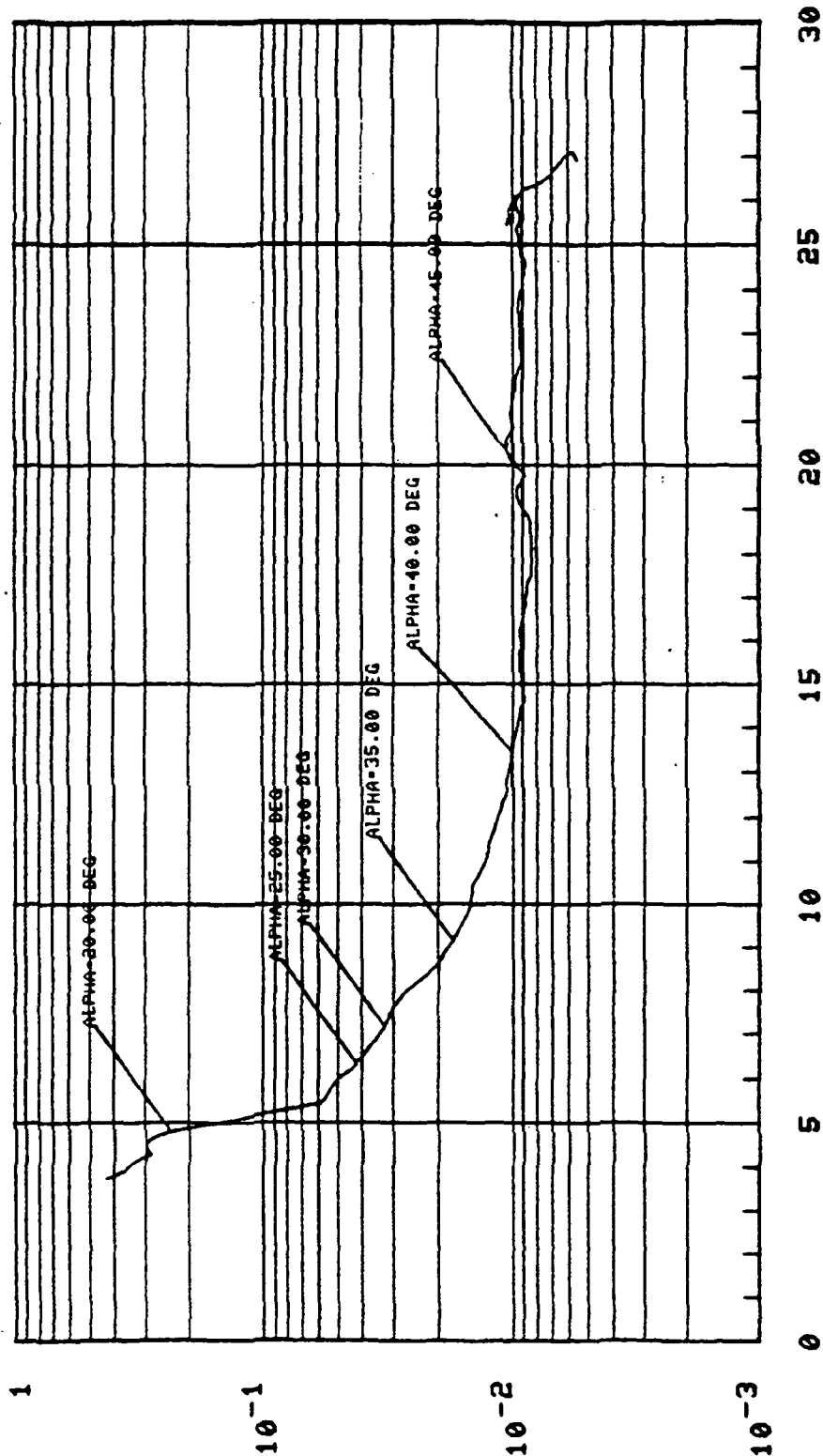


06/18/84  
BASE TIME - 09049744.000 SEC.

MACH NUMBER

# STS-2 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

U07T9804A/H-REF 200-1480 SEC

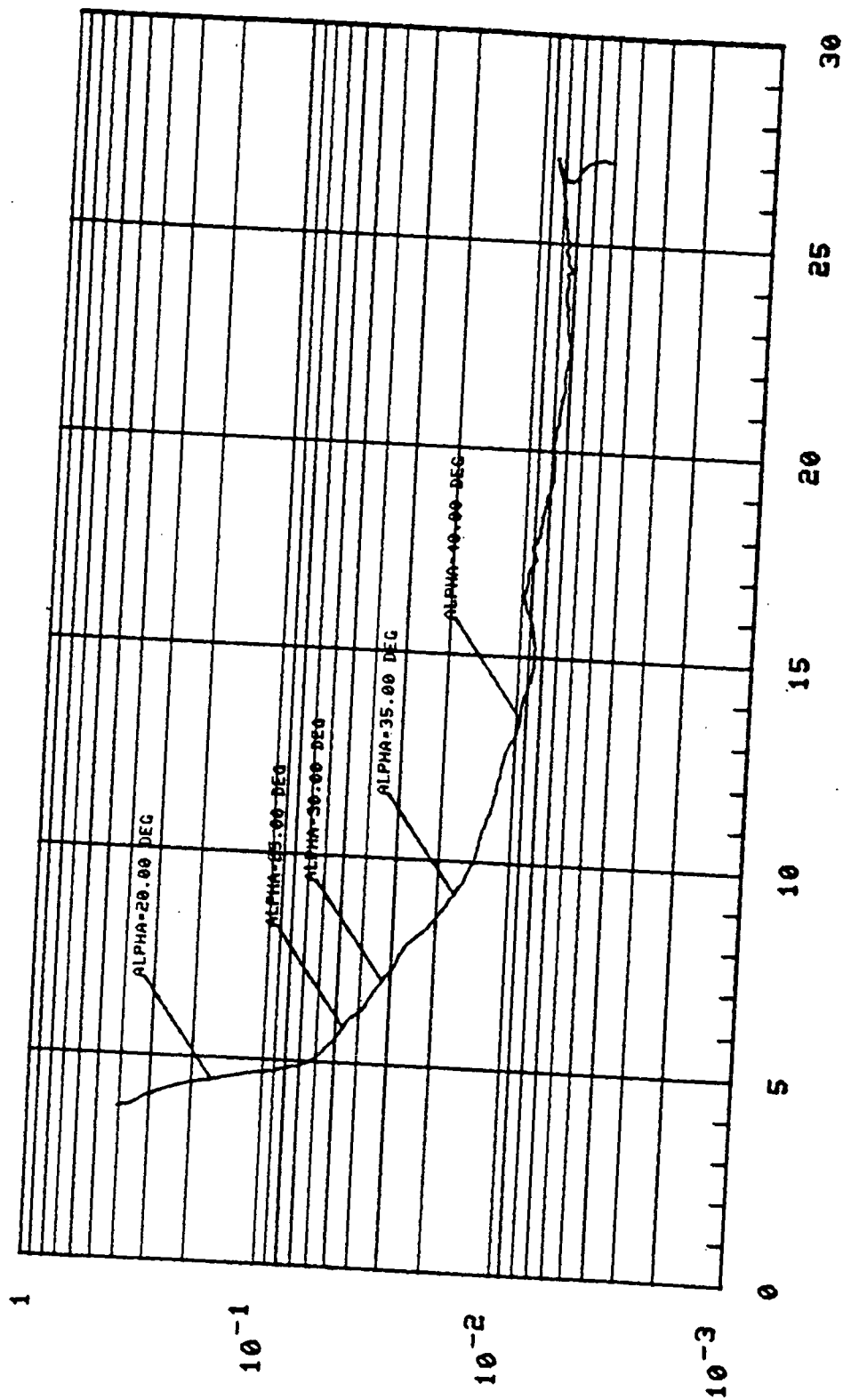


06/18/84  
BASE TIME - B7550836.000 SEC.

MACH NUMBER

# STS-3 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

U07T9804H/H-REF 200-1380 SEC



MACH NUMBER

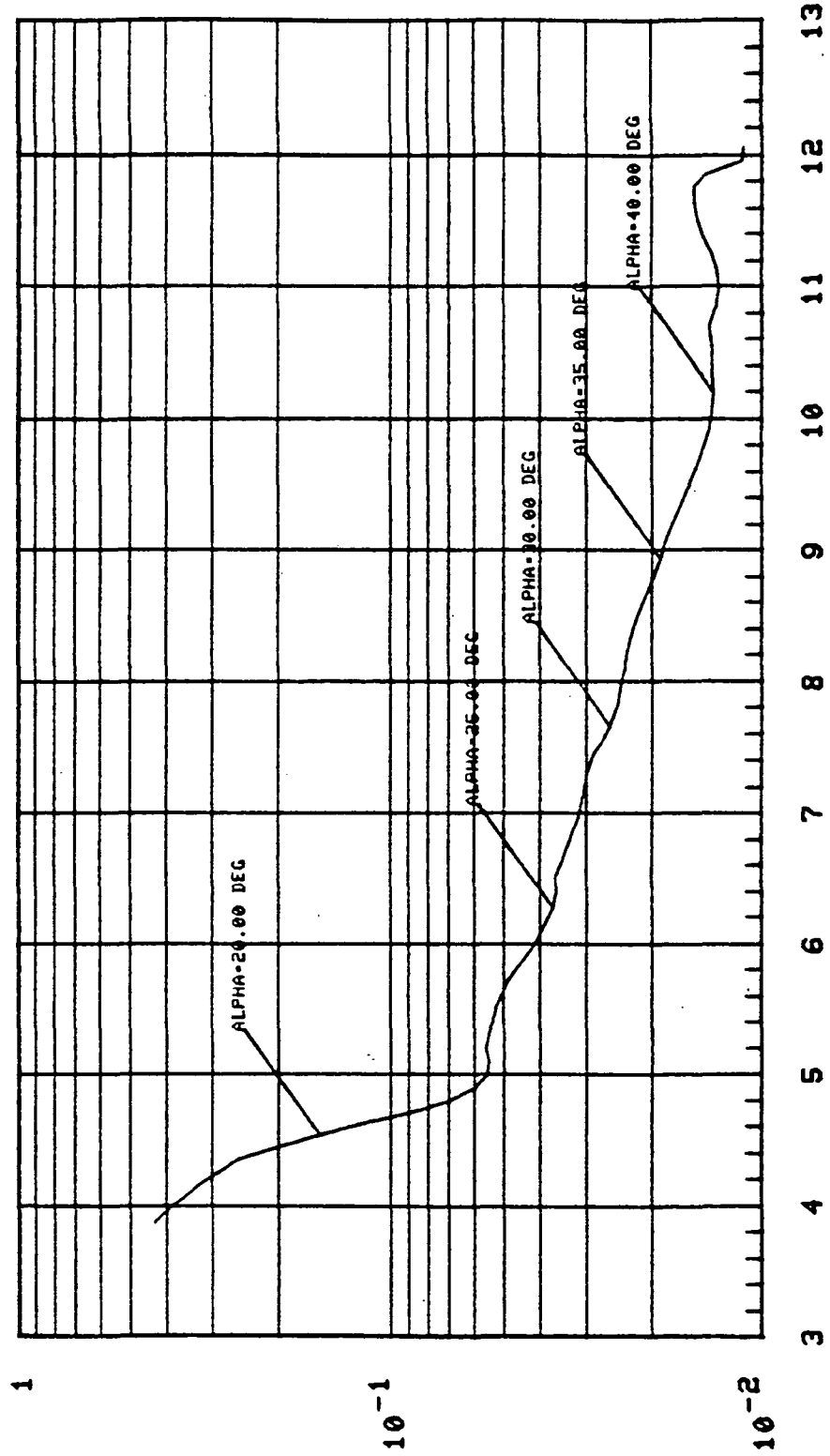
BASE TIME - 07745684.000 SEC.  
06/18/84

FLIGHT COMPARISON - H/H-REF



# STS-4 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

U07798046/H-REF 955-1300 SEC

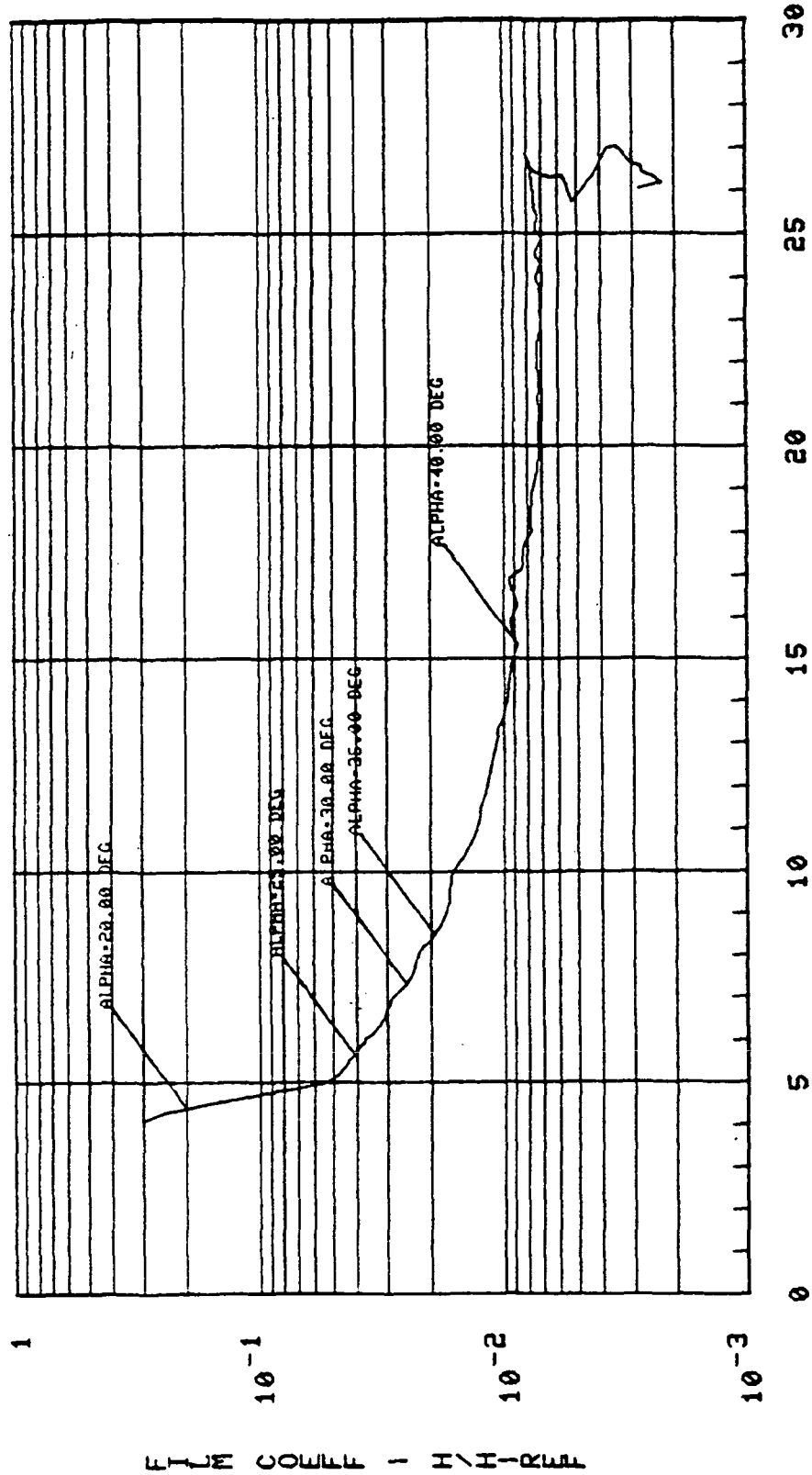


FILE COMPARIS - H/H-REF

MACH NUMBER  
06/18/84  
BASE TIME - 16040423.000 SEC.

# STS-5 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

U07T52044/H-REF 150-1350 SEC



06/19/84  
BASE TIME - 27698591.000 SEC.

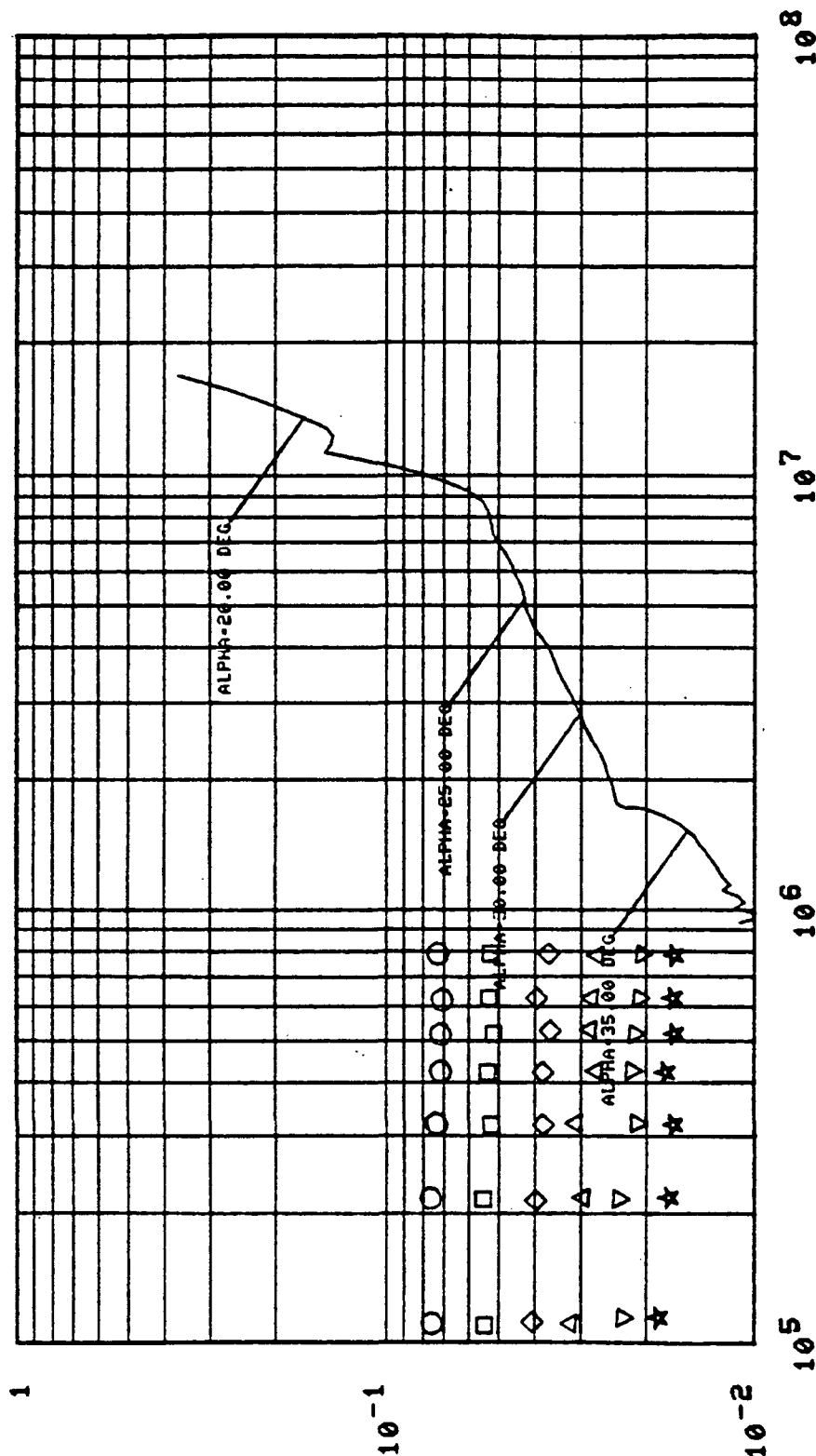
MACH NUMBER

# STS-1 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

U07T98044/H-REF 1065-1460 SEC

- 20 DEGREES
- 25 DEGREES
- ◇ 30 DEGREES
- △ 35 DEGREES
- ▽ 40 DEGREES
- ★ 45 DEGREES

○ □ ◇ △ ▽ ★



06/18/84  
BASE TIME - 09049744.000 SEC.

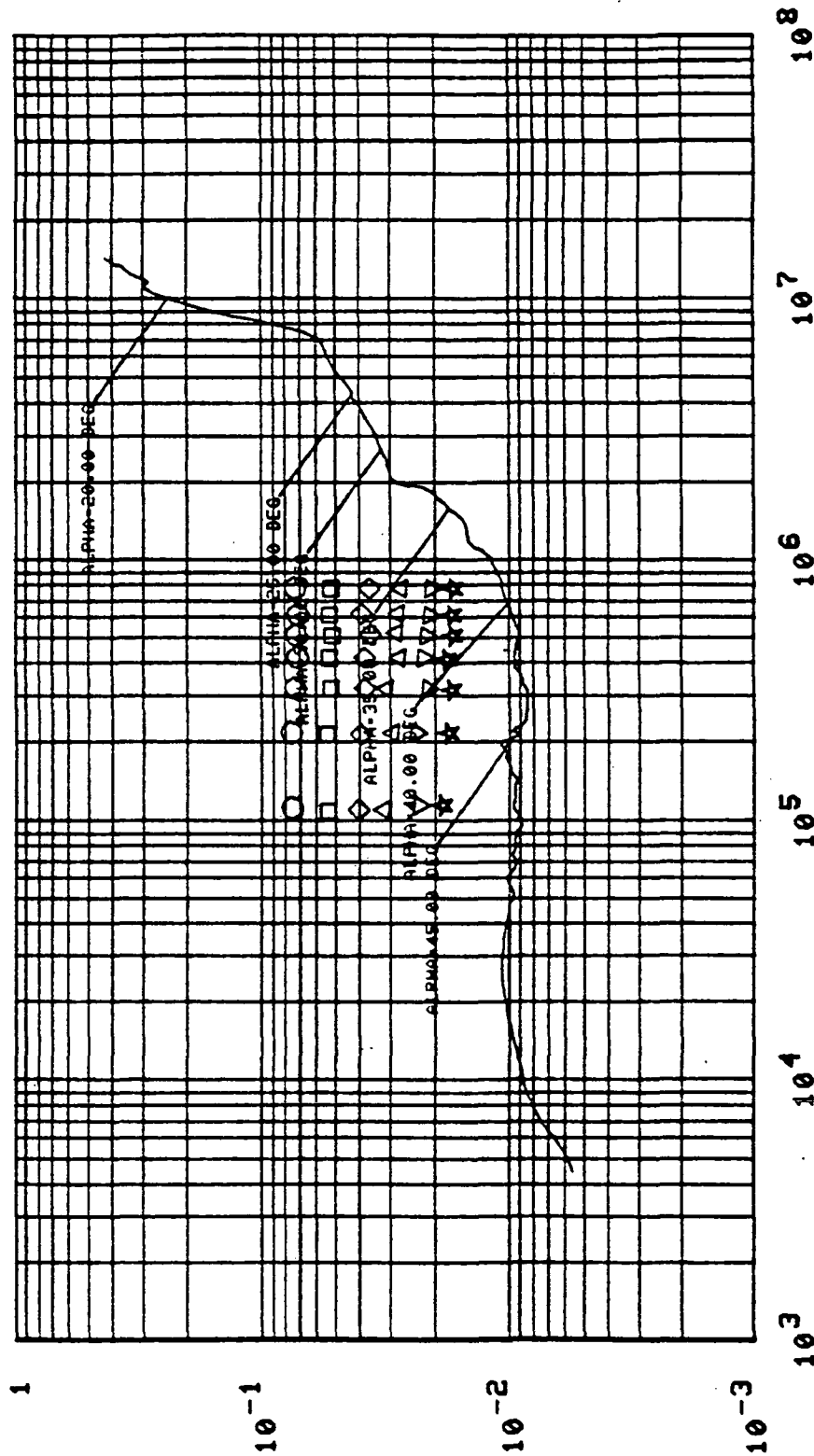
REYNOLDS NUMBER (NS)

# STS-2 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

- OH39 ALPHA - 20 DEGREES
- OH39 ALPHA - 25 DEGREES
- OH39 ALPHA - 30 DEGREES
- OH39 ALPHA - 35 DEGREES
- OH39 ALPHA - 40 DEGREES
- OH39 ALPHA - 45 DEGREES

○ □ ◇ △ ☆

U0775804R/H-REF 200-1480 SEC



REYNOLDS NUMBER (NS)

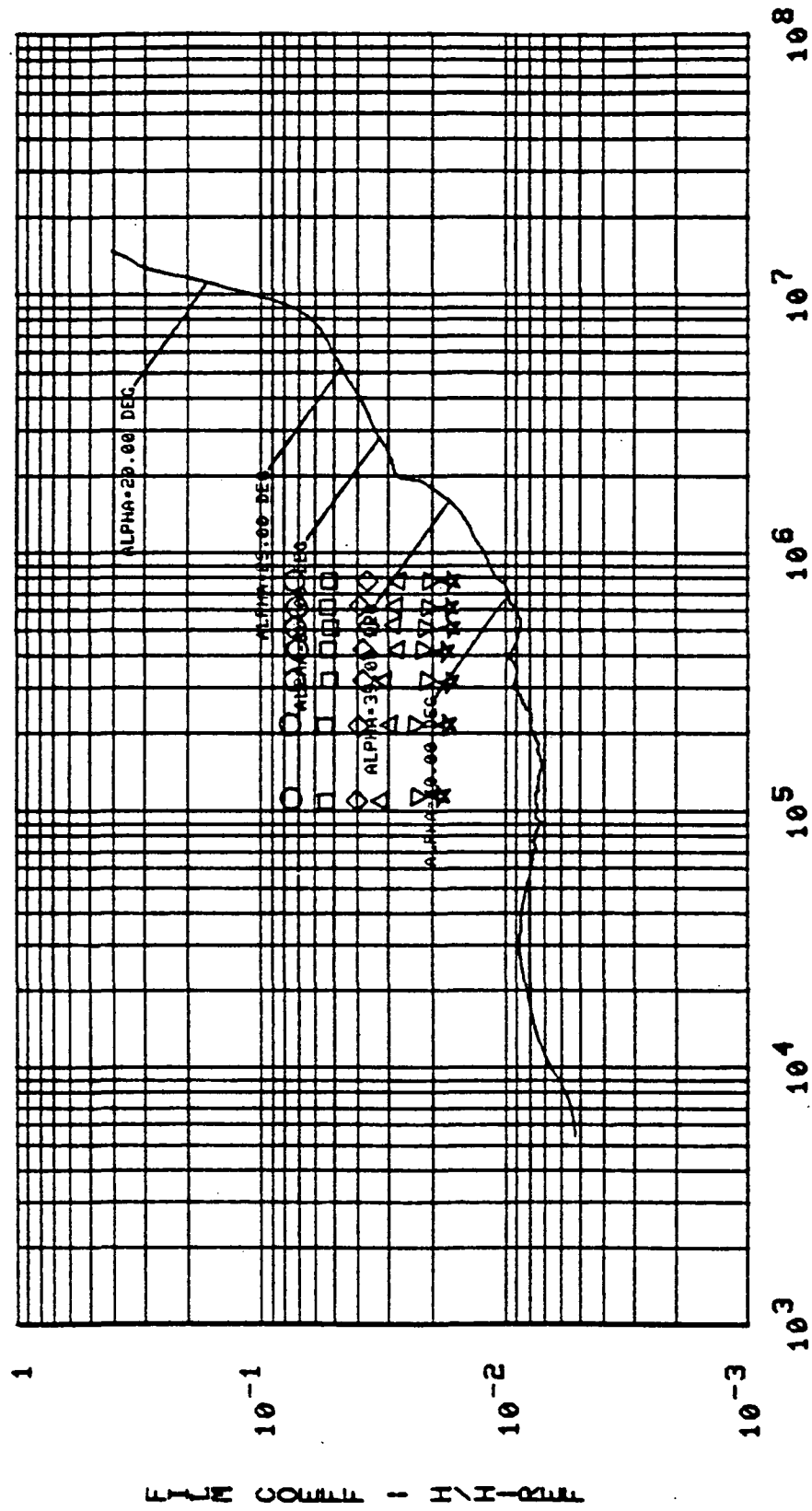
BASE TIME - 2756036.000 SEC.

06/18/84

# STS-3 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

- 39 ALPHA - 20 DEGREES
- 39 ALPHA - 25 DEGREES
- ◇ 39 ALPHA - 30 DEGREES
- △ 39 ALPHA - 35 DEGREES
- × 39 ALPHA - 40 DEGREES
- ☆ 39 ALPHA - 45 DEGREES

007T9804A/H-REF 200-1380 SEC



REYNOLDS NUMBER (NS)

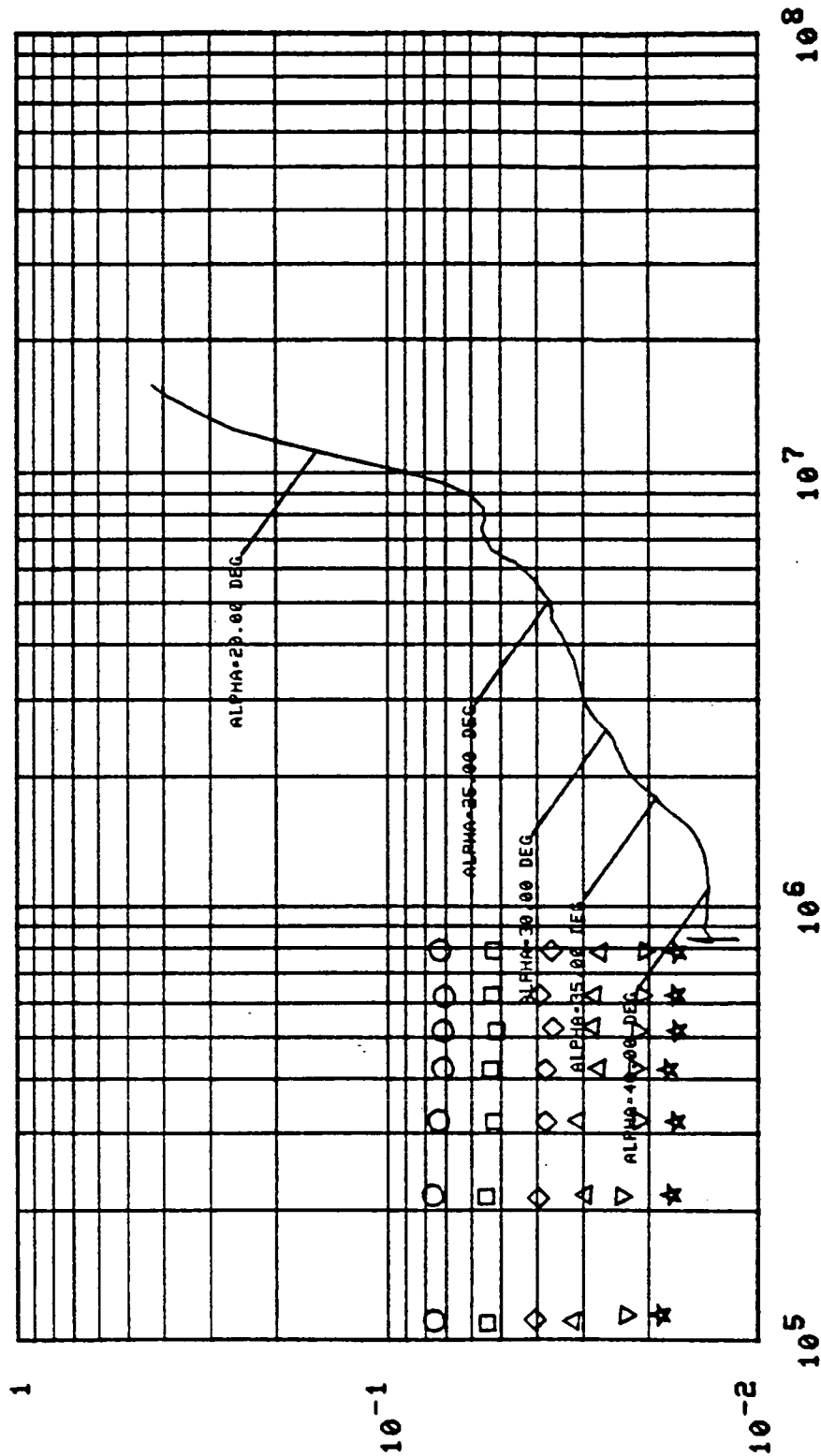
BASE TIME - 07745684.000 SEC.

06/18/84

# STS-4 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

O H39 ALPHA - 20 DEGREES  
 □ H39 ALPHA - 25 DEGREES  
 △ H39 ALPHA - 30 DEGREES  
 ◇ H39 ALPHA - 35 DEGREES  
 ☆ H39 ALPHA - 40 DEGREES  
 ☆ H39 ALPHA - 45 DEGREES

U0779804H/H-REF 965-1300 SEC

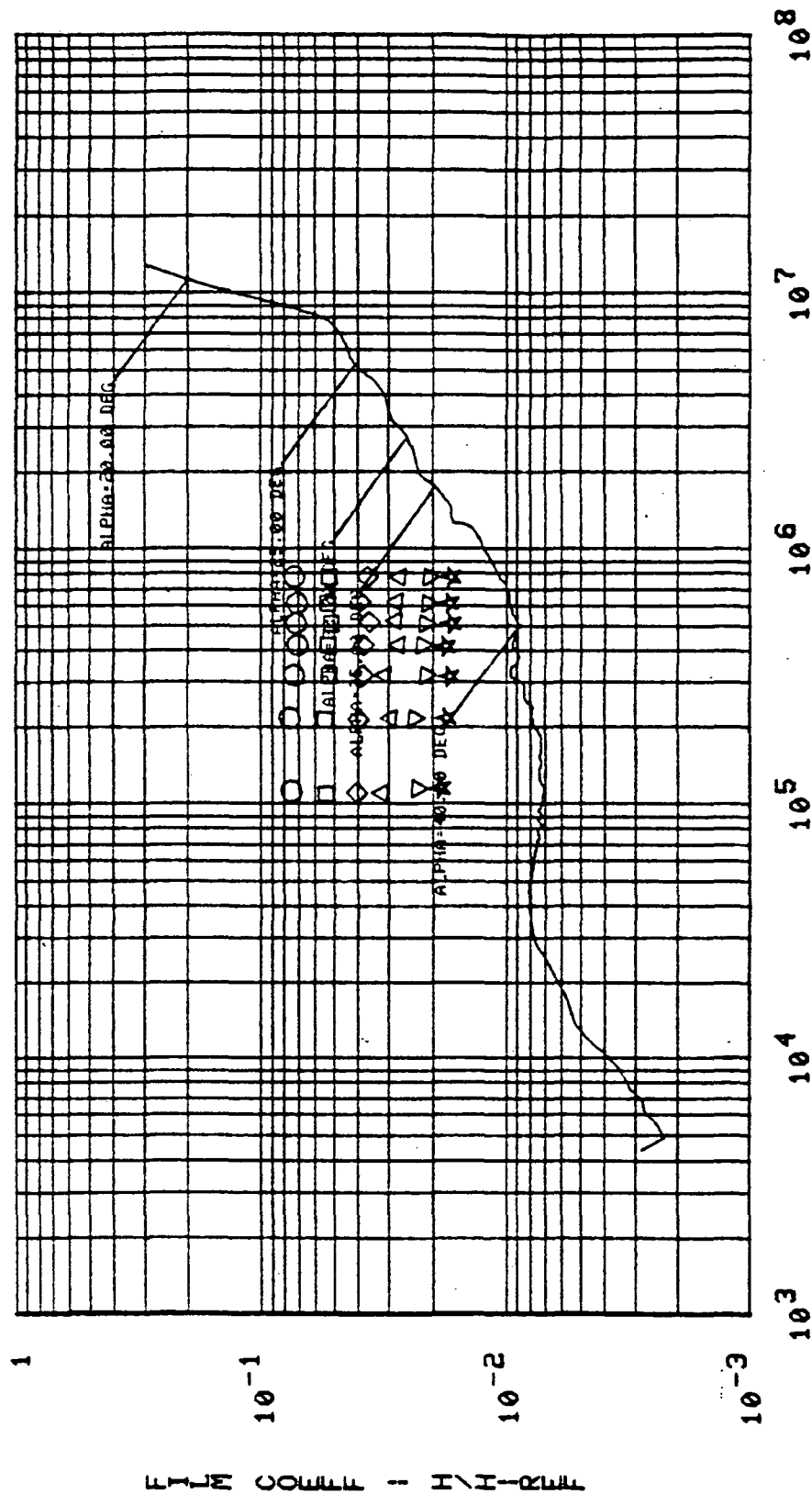


REYNOLDS NUMBER (NS) 06/18/84 BASE TIME - 16040423.000 SEC.

# STS-5 (107 FT LENGTH CL $X/L=0.035$ ) FLIGHT PARAMETER COMPARIS

○ QH39 ALPHA = 20 DEGREES  
 □ QH39 ALPHA = 25 DEGREES  
 × QH39 ALPHA = 30 DEGREES  
 △ QH39 ALPHA = 35 DEGREES  
 ☆ QH39 ALPHA = 40 DEGREES  
 ★ QH39 ALPHA = 45 DEGREES

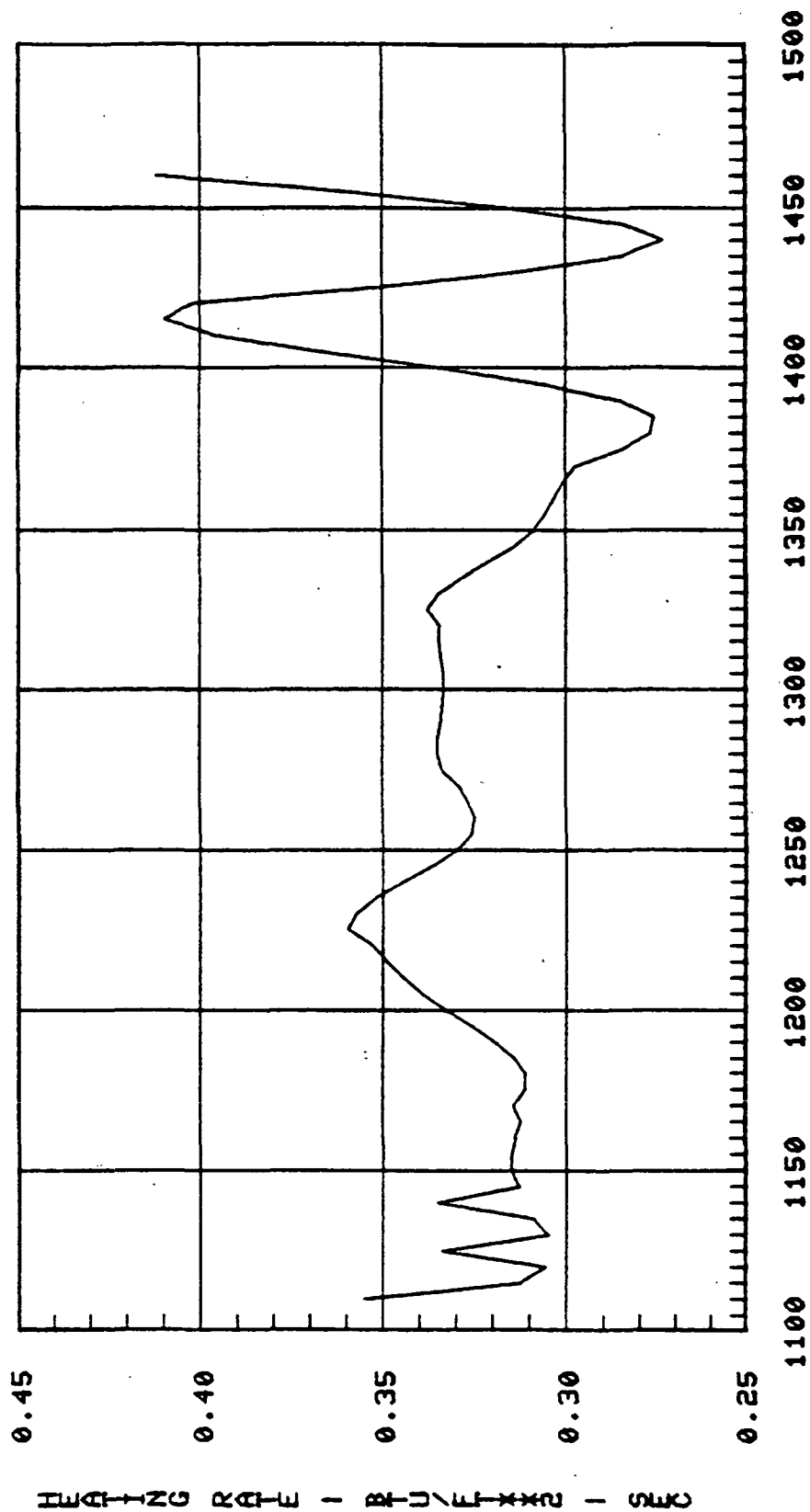
007T9804H/H-REF 150-1350 SEC



REYNOLDS NUMBER (NS) 06/19/84  
 BASE TIME = 27698591.000 SEC.

# STS-1 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

U07T9804A



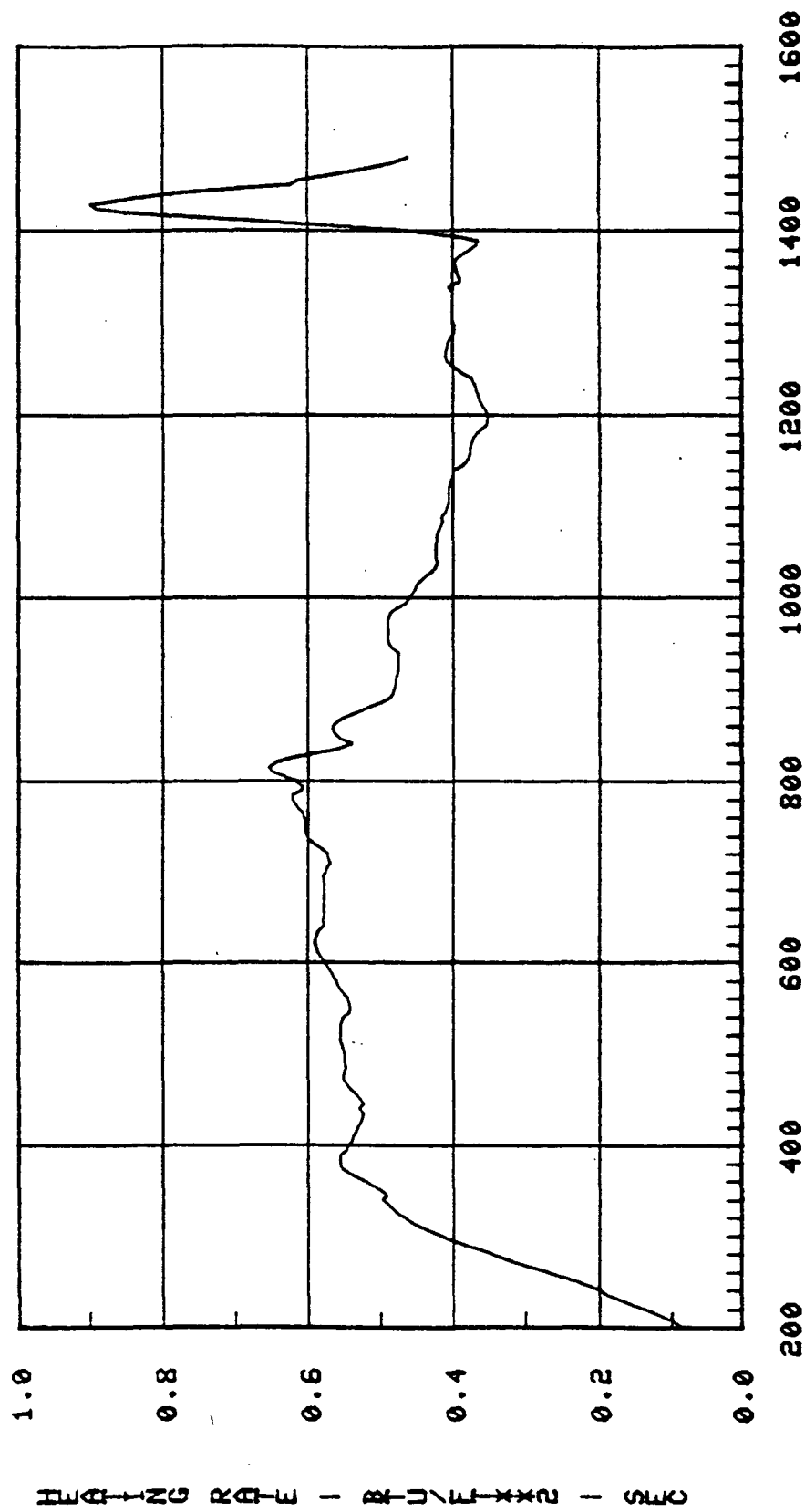
TIME - SECONDS

06/18/84



# STS-2 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

U07T9804A

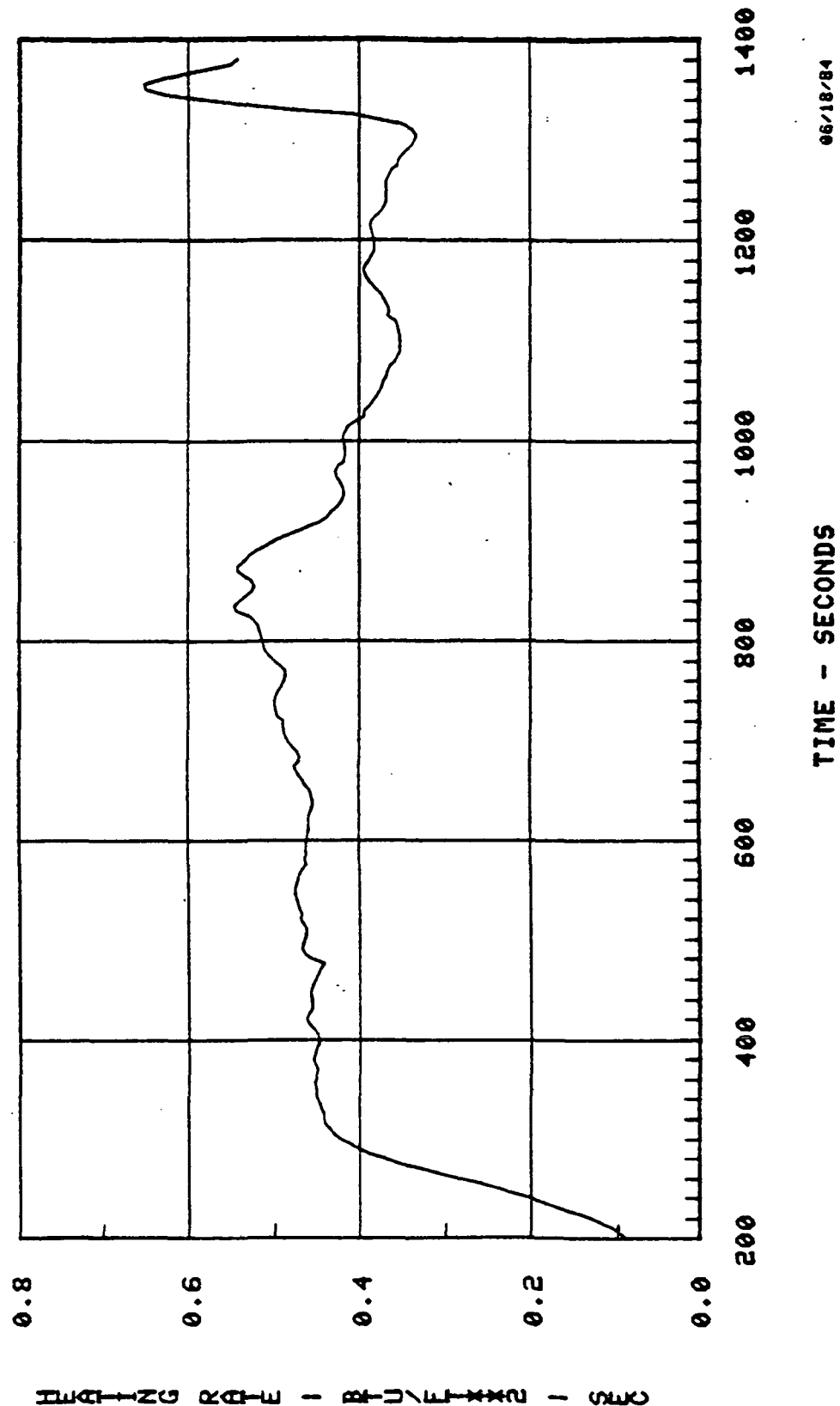


TIME - SECONDS

06/18/84

# STS-3 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

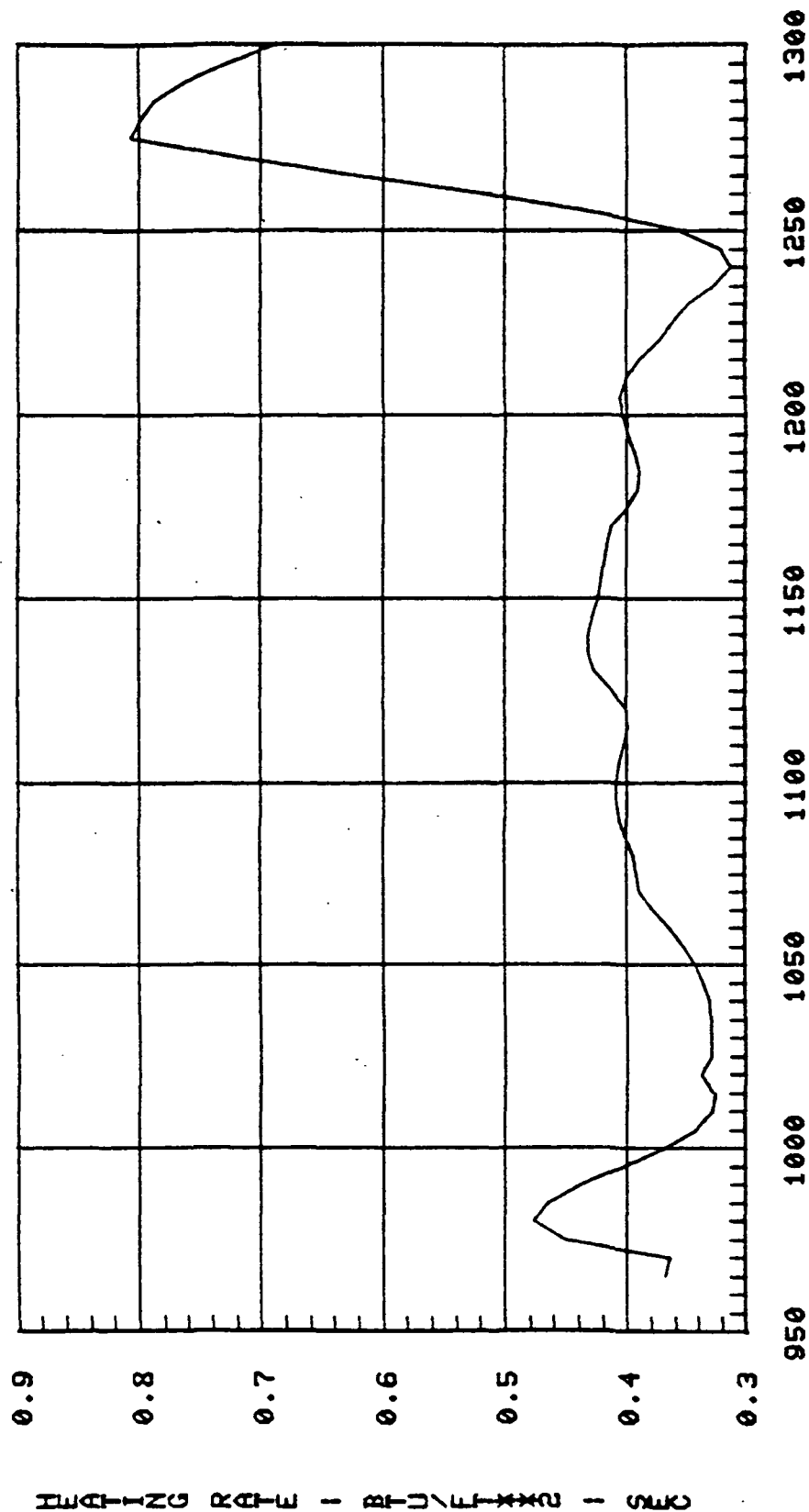
U07T98044



06/18/84

# STS-4 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

U07T9804A

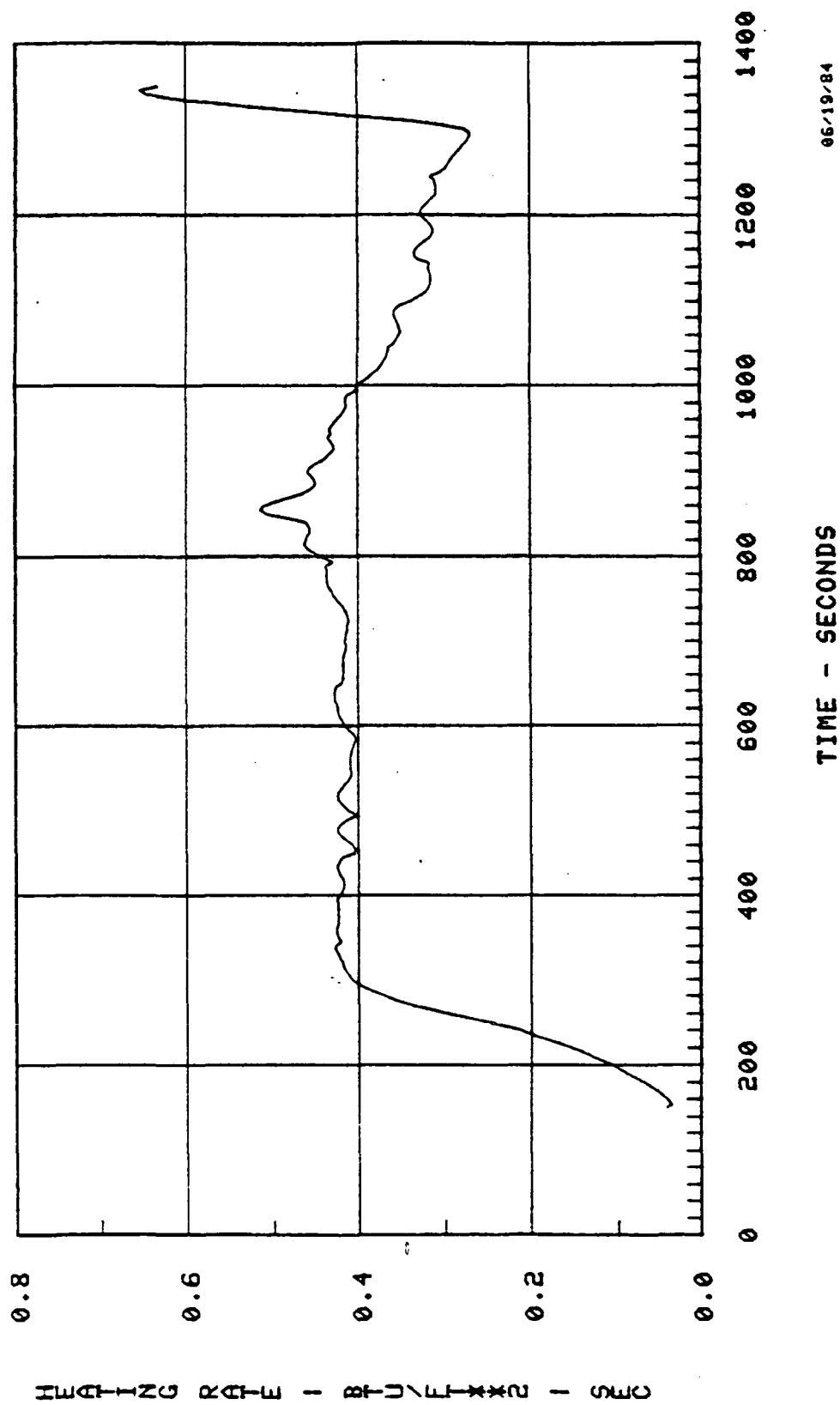


TIME - SECONDS

06/18/84

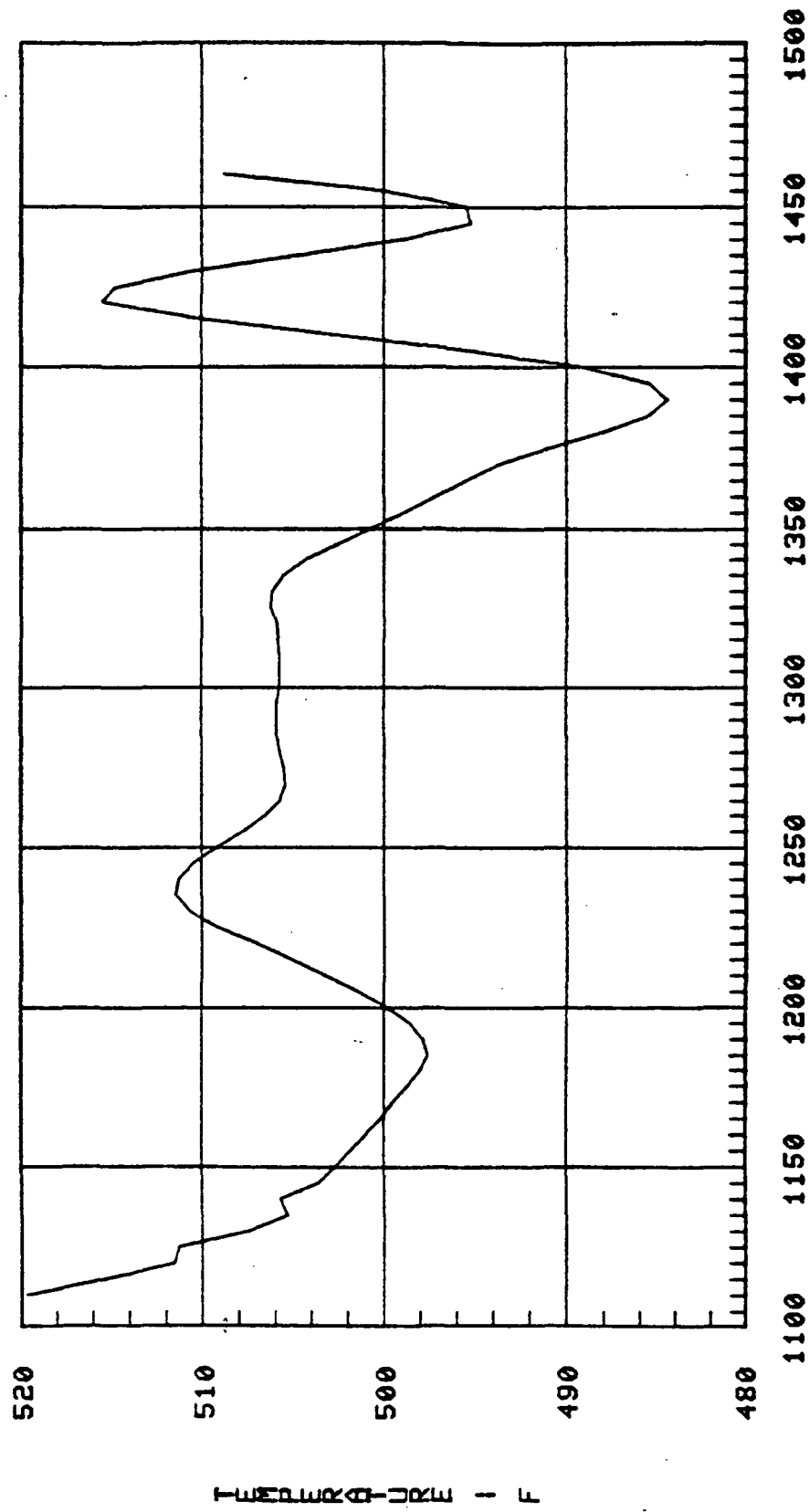
# STS-5 (107 FT LENGTH CL $X/L=0.035$ ) FLIGHT PARAMETER COMPARIS

U07T5E046



# STS-1 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

U07T9804A

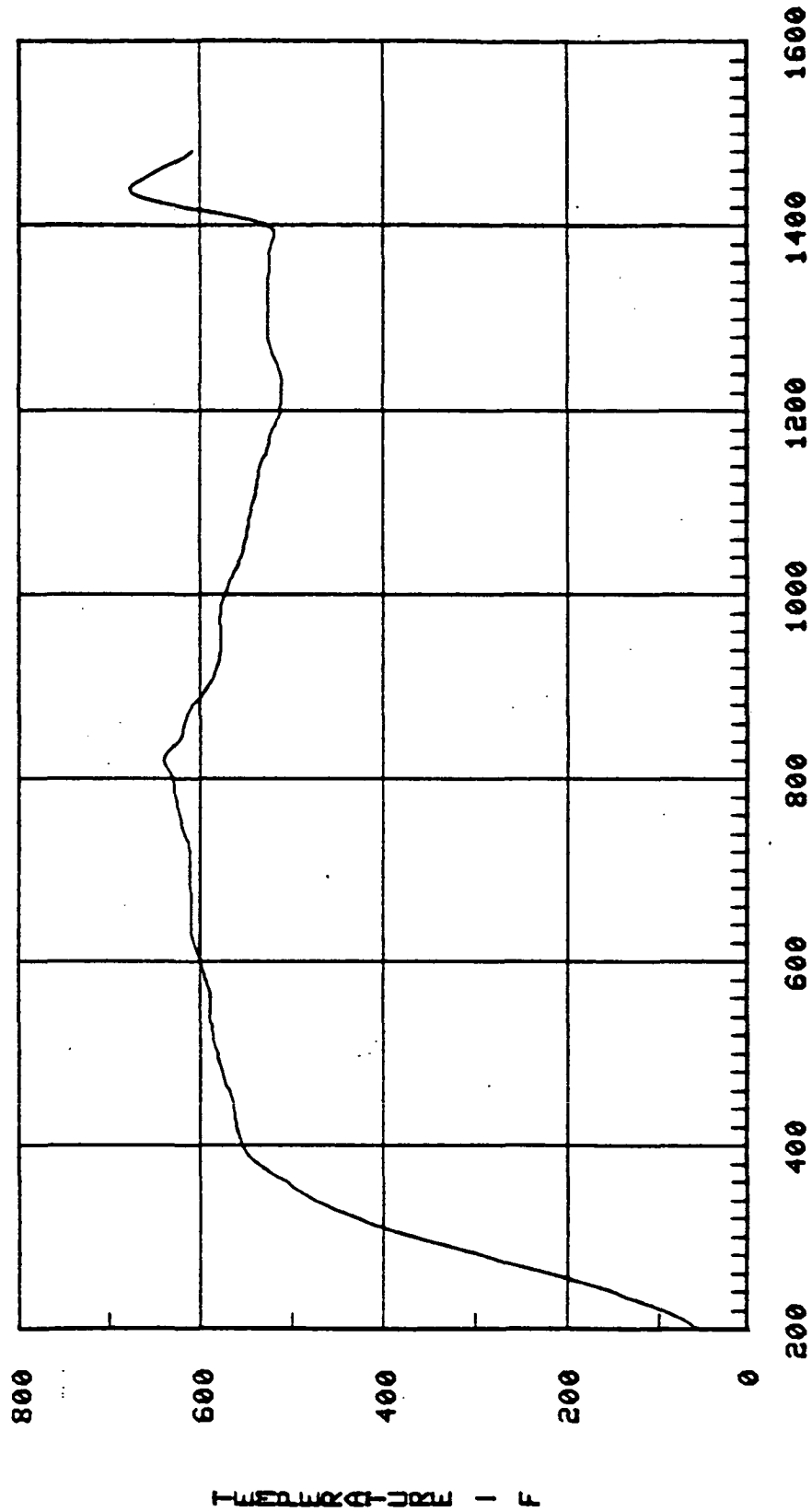


TIME - SECONDS

06/18/84

# STS-2 (107 FT LENGTH CL X/L=0.035) FLIGHT PARAMETER COMPARIS

U07T9804A

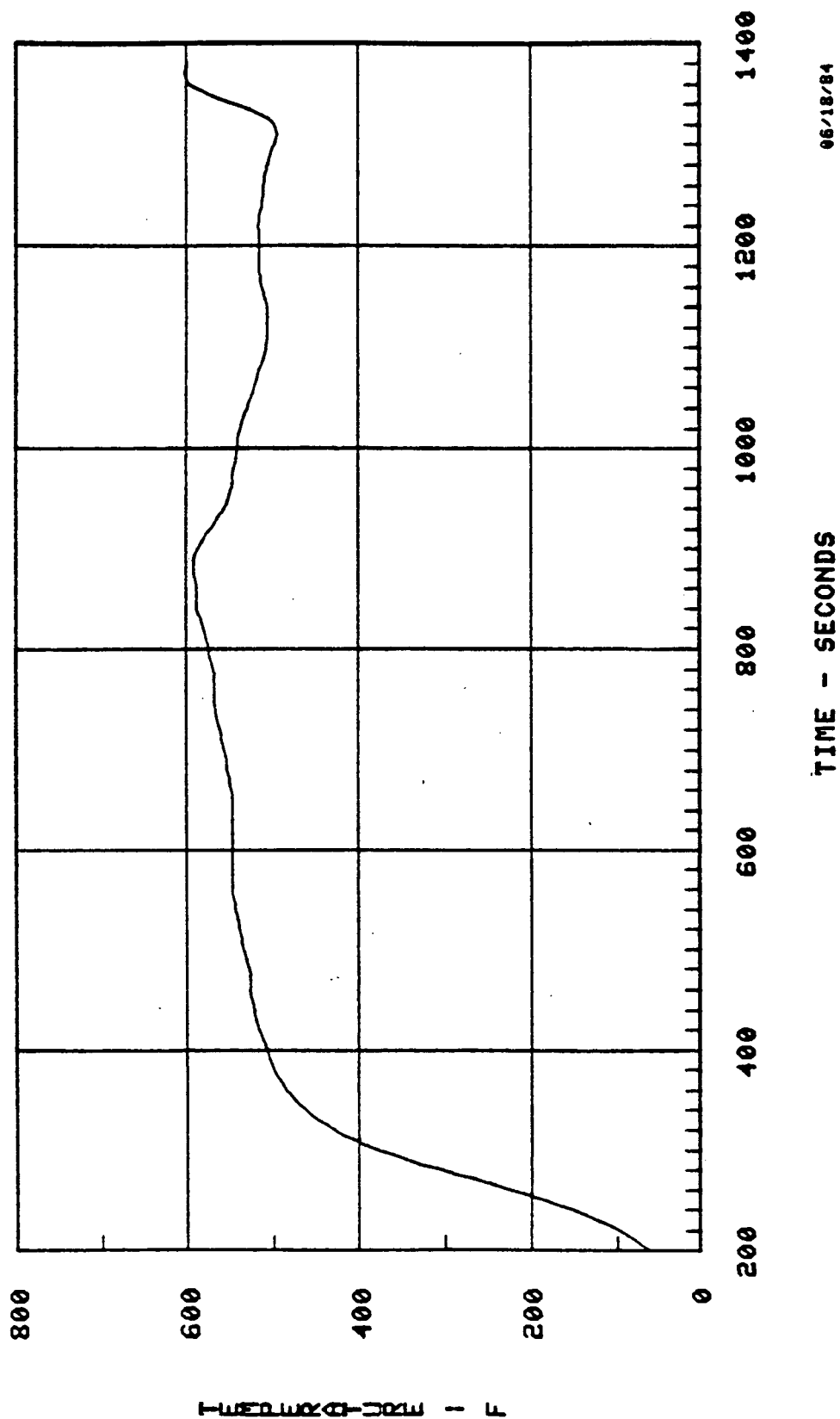


TIME - SECONDS

06/18/84

# STS-3 (107 FT LENGTH CL $X/L=0.035$ ) FLIGHT PARAMETER COMPARIS

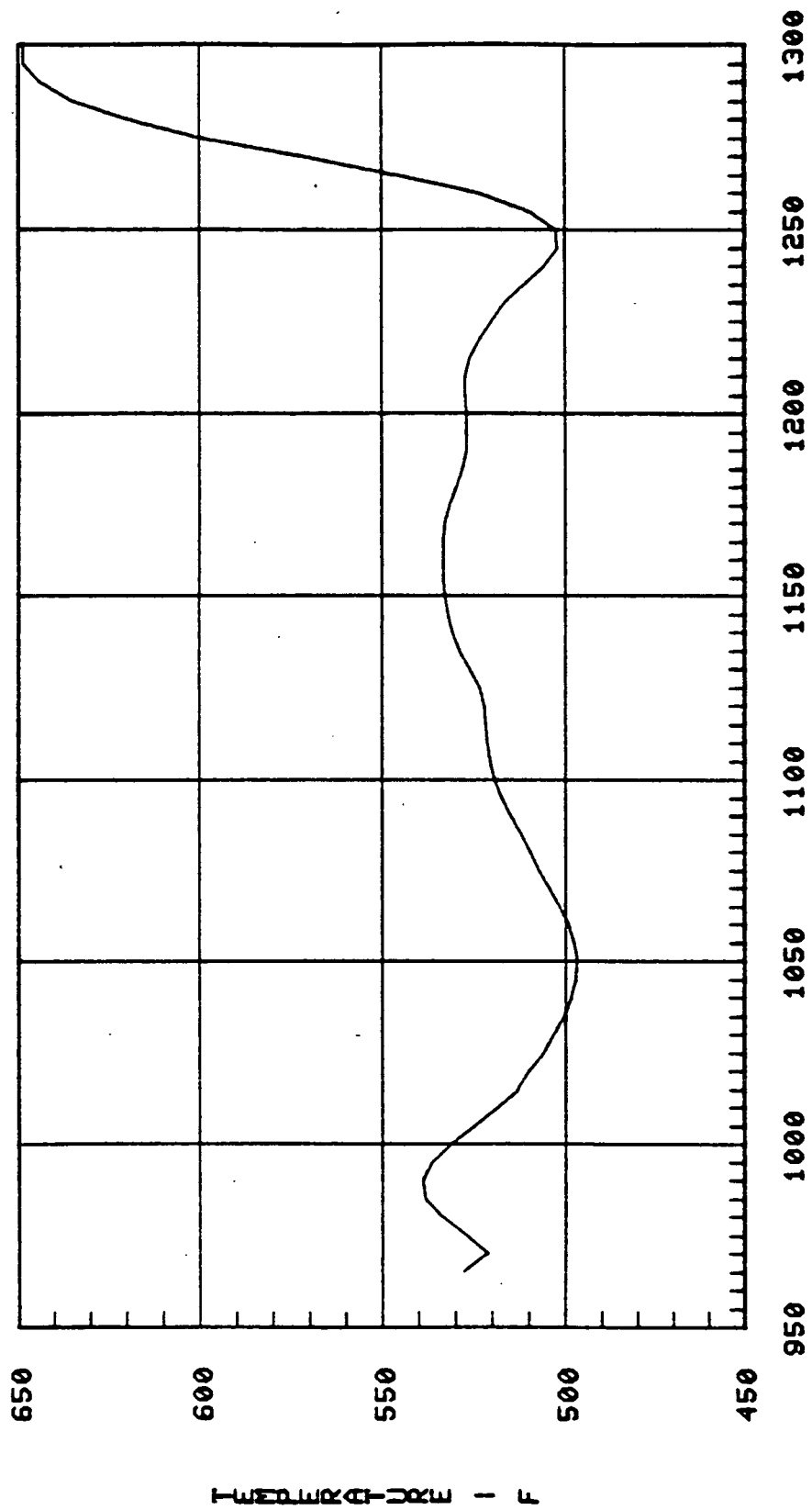
U07T9804A



06/18/84

# STS-4 (107 FT LENGTH CL $X/L=0.035$ ) FLIGHT PARAMETER COMPARIS

U07T9804A



TIME - SECONDS

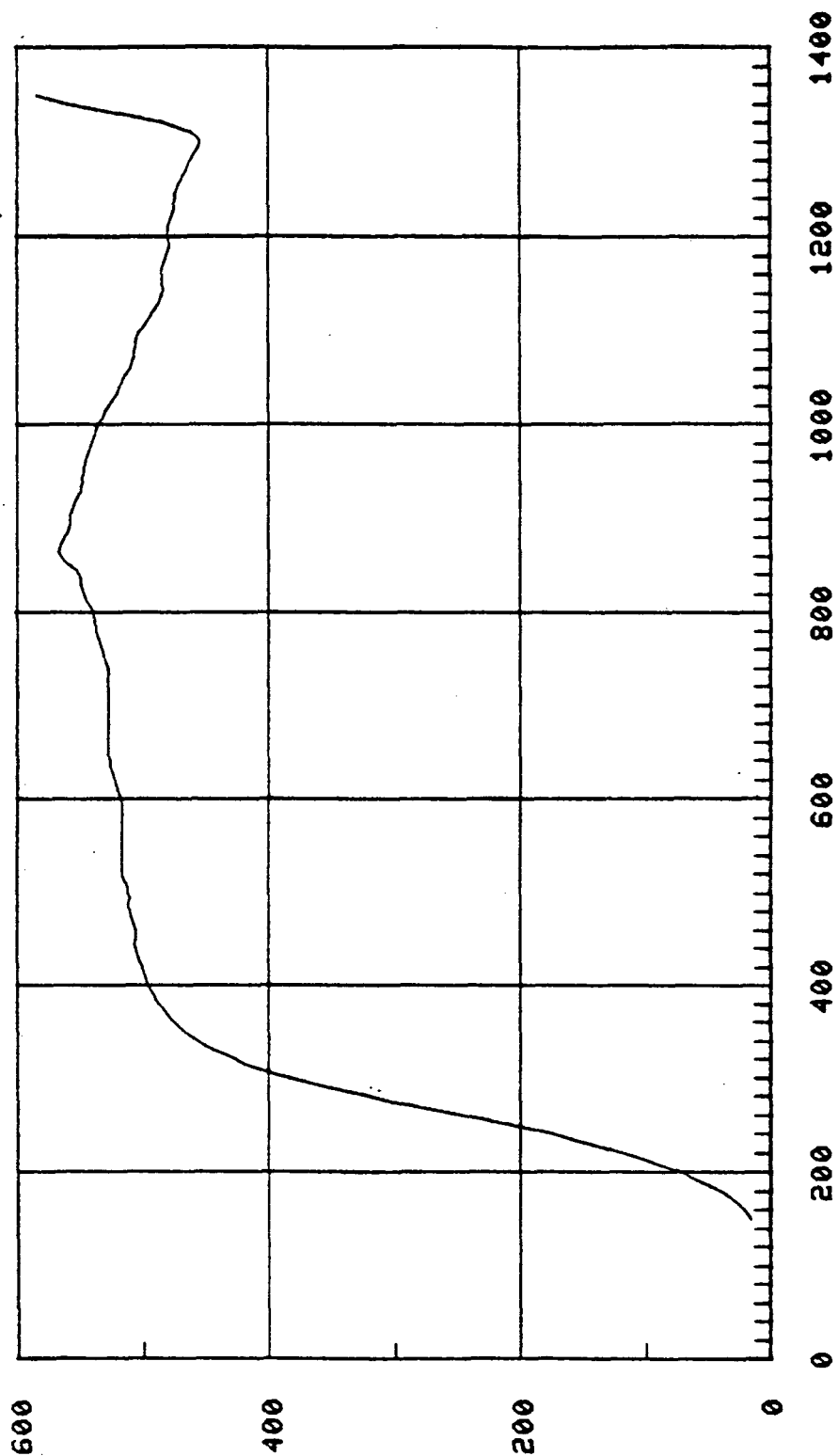
06/18/84

FUEL WEIGHT - F



# STS-5 (107 FT LENGTH CL $X/L=0.035$ ) FLIGHT PARAMETER COMPARIS

U0719804A



TIME - SECONDS

06/19/84

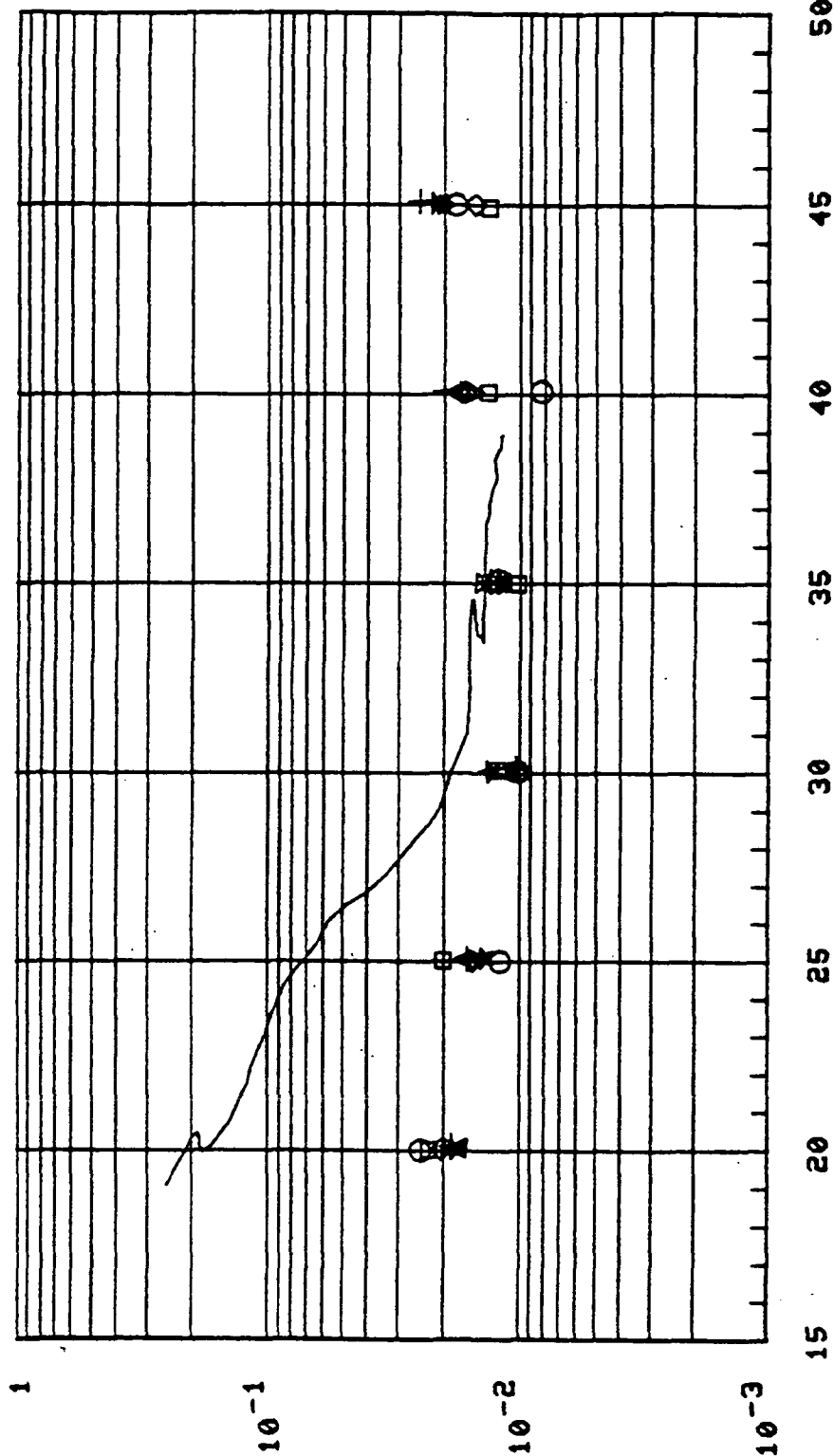
FEEDBACK - F

# STS-1 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

U07T9806A/H-REF 1065-1460 SEC

0H39 0.0175 SCALE RE - 0.5 E06  
 0H39 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H39 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

□ ◇ △ ▽ +



FLIGHT PARAMETER - H-REF

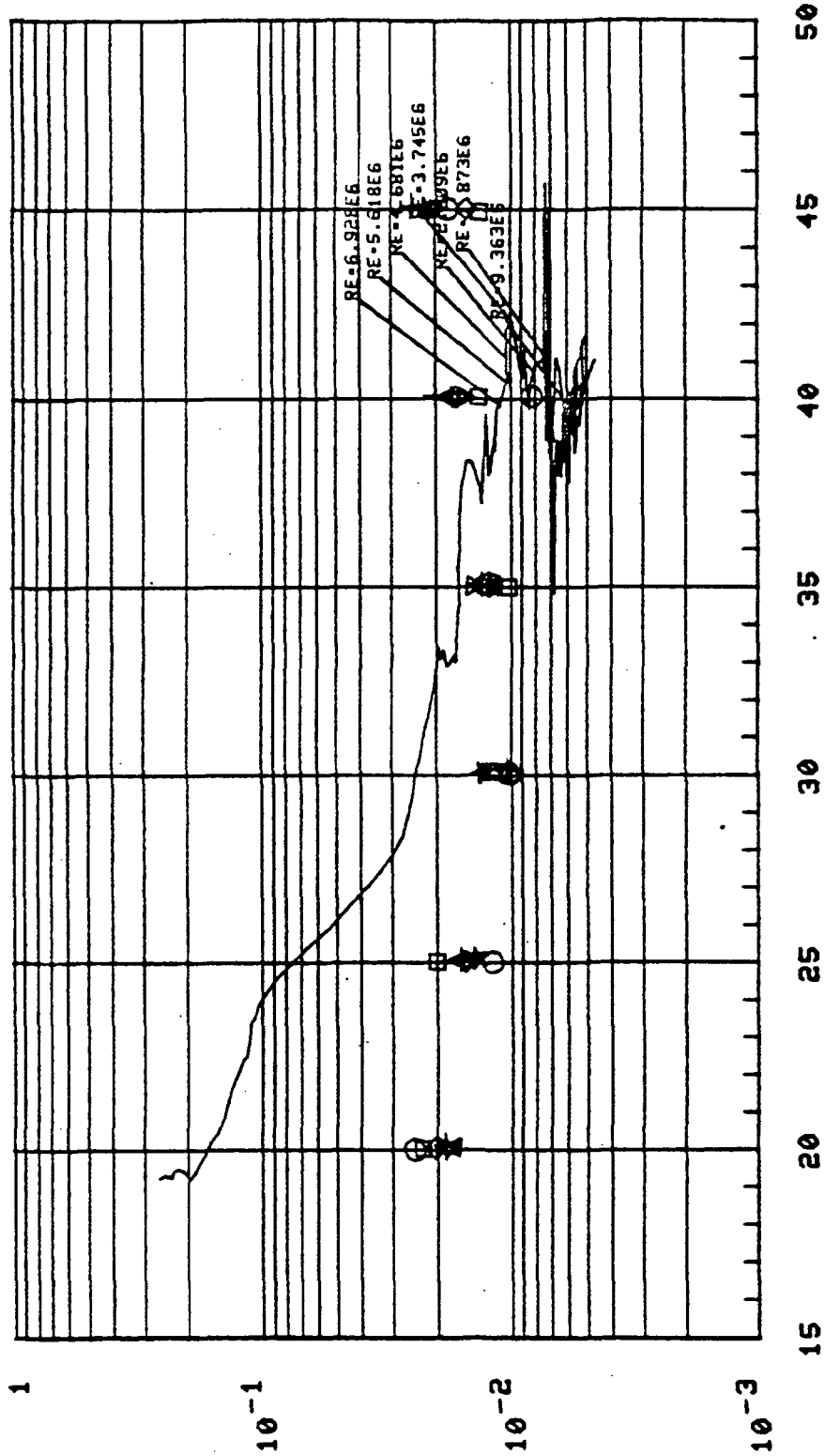
05/18/84  
 BASE TIME - 09010744.000 SEC.

# STS-2 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

OH39 0.0175 SCALE RE - 0.5 E06  
 OH39 0.0175 SCALE RE - 1.0 E06  
 OH39 0.0175 SCALE RE - 1.5 E06  
 OH39 0.0175 SCALE RE - 2.0 E06  
 OH39 0.0175 SCALE RE - 2.5 E06  
 OH39 0.0175 SCALE RE - 3.0 E06  
 OH39 0.0175 SCALE RE - 3.7 E06

U07T98064/H-REF 200-1480 SEC

O □ X Δ +  
 +



F L M C O U L L - H \ H - R E F

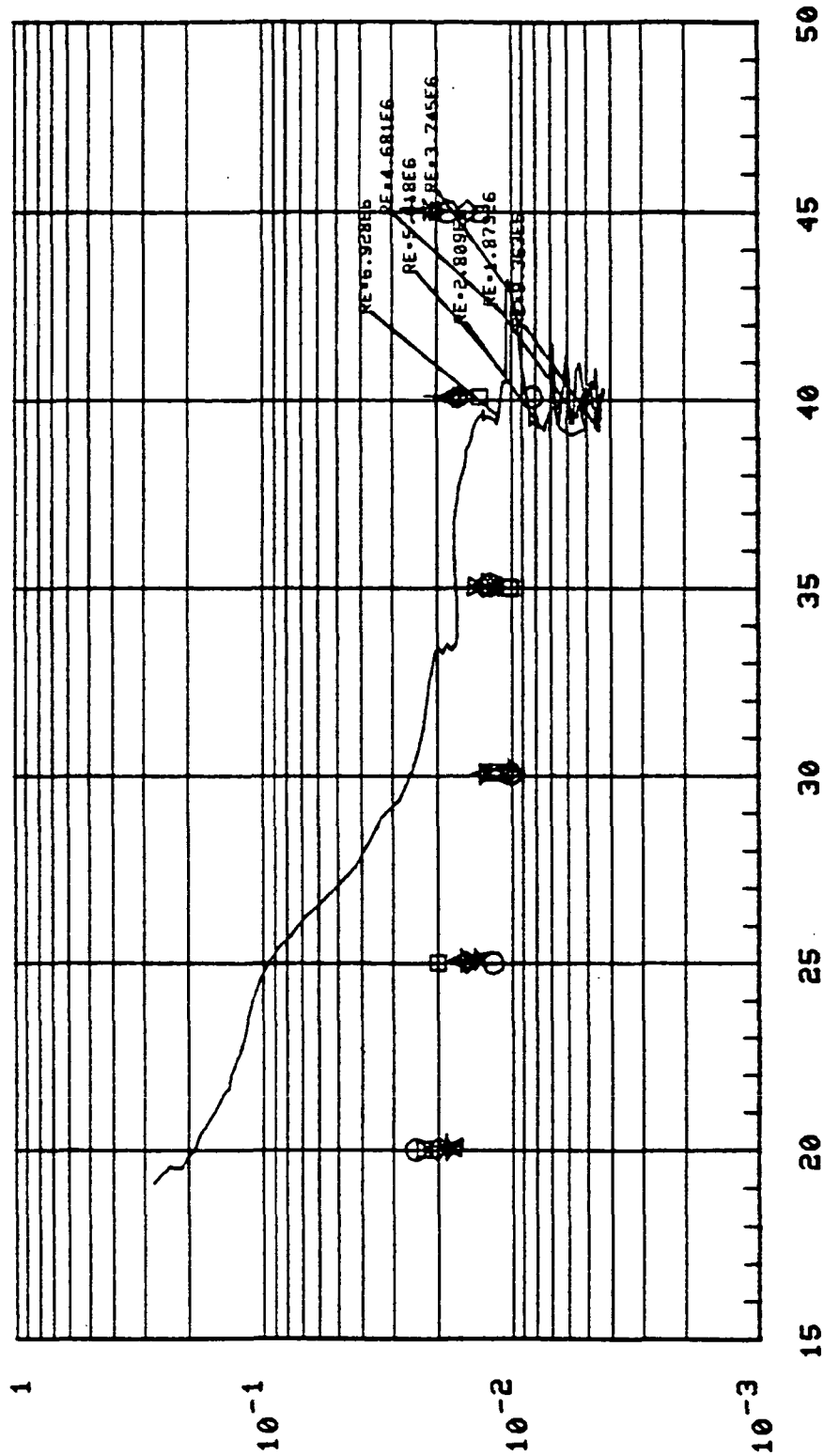
ANGLE-OF-ATTACK - DEG  
 BASE TIME - 27550236.000 SEC.  
 06/18/84

# STS-3 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

U07T980664/H-REF 200-1380 SEC

OH39 0.0175 SCALE RE - 0.5 E06  
 OH39 0.0175 SCALE FE - 1.0 E06  
 OH39 0.0175 SCALE RE - 1.5 E06  
 OH39 0.0175 SCALE RE - 2.0 E06  
 OH39 0.0175 SCALE RE - 2.5 E06  
 OH39 0.0175 SCALE RE - 3.0 E06  
 OH39 0.0175 SCALE RE - 3.7 E06

○ □ × △ +  
 ○ □ × △ +



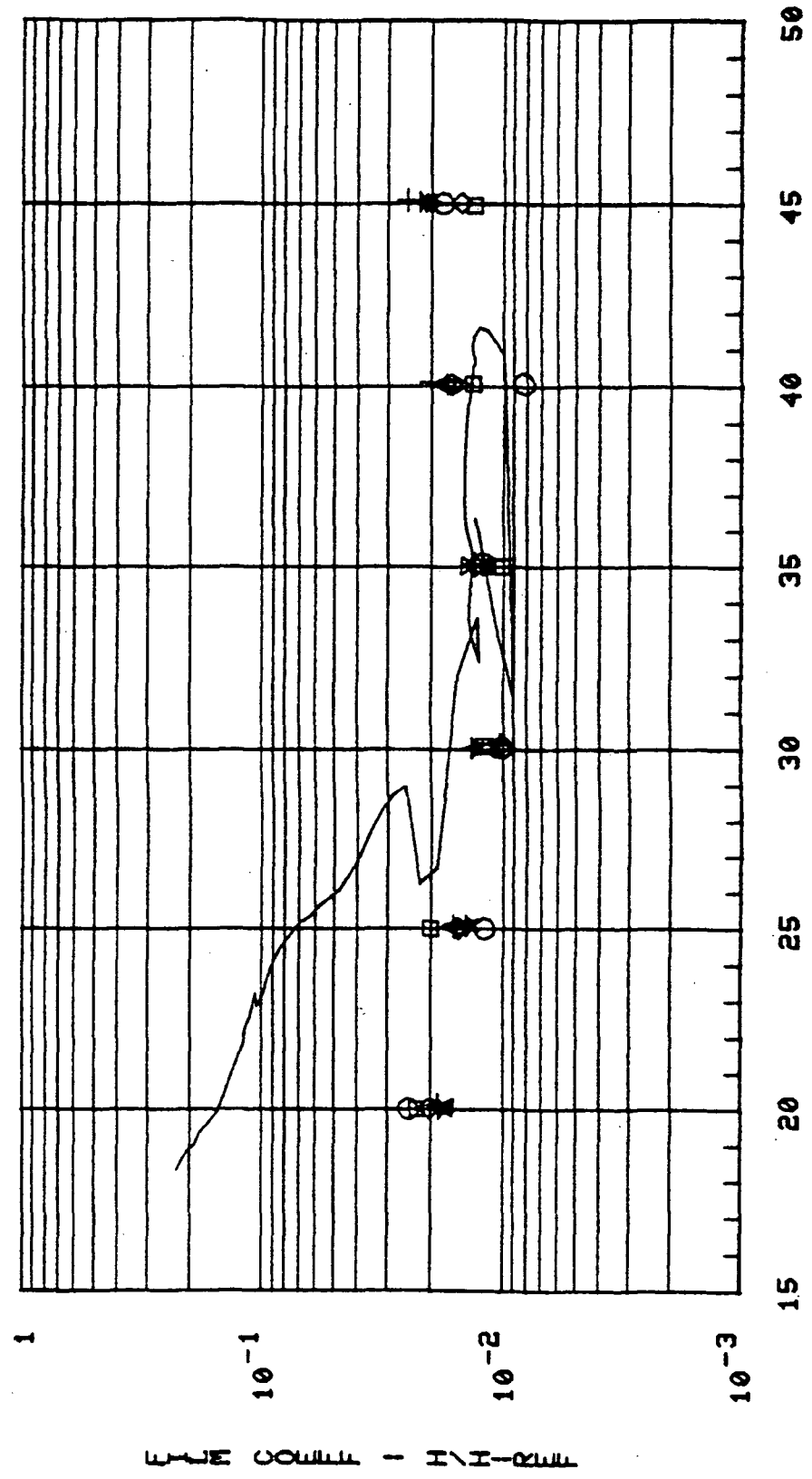
06/18/84  
 BASE TIME - 07745684.000 SEC.

# STS-4 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

U07T98064/H-REF 965-1300 SEC

- 0H39 0.0175 SCALE RE - 0.5 E06
- 0H39 0.0175 SCALE RE - 1.0 E06
- 0H39 0.0175 SCALE RE - 1.5 E06
- 0H39 0.0175 SCALE RE - 2.0 E06
- 0H39 0.0175 SCALE RE - 2.5 E06
- 0H39 0.0175 SCALE RE - 3.0 E06
- 0H39 0.0175 SCALE RE - 3.7 E06

○ □ ◇ △ ★ +



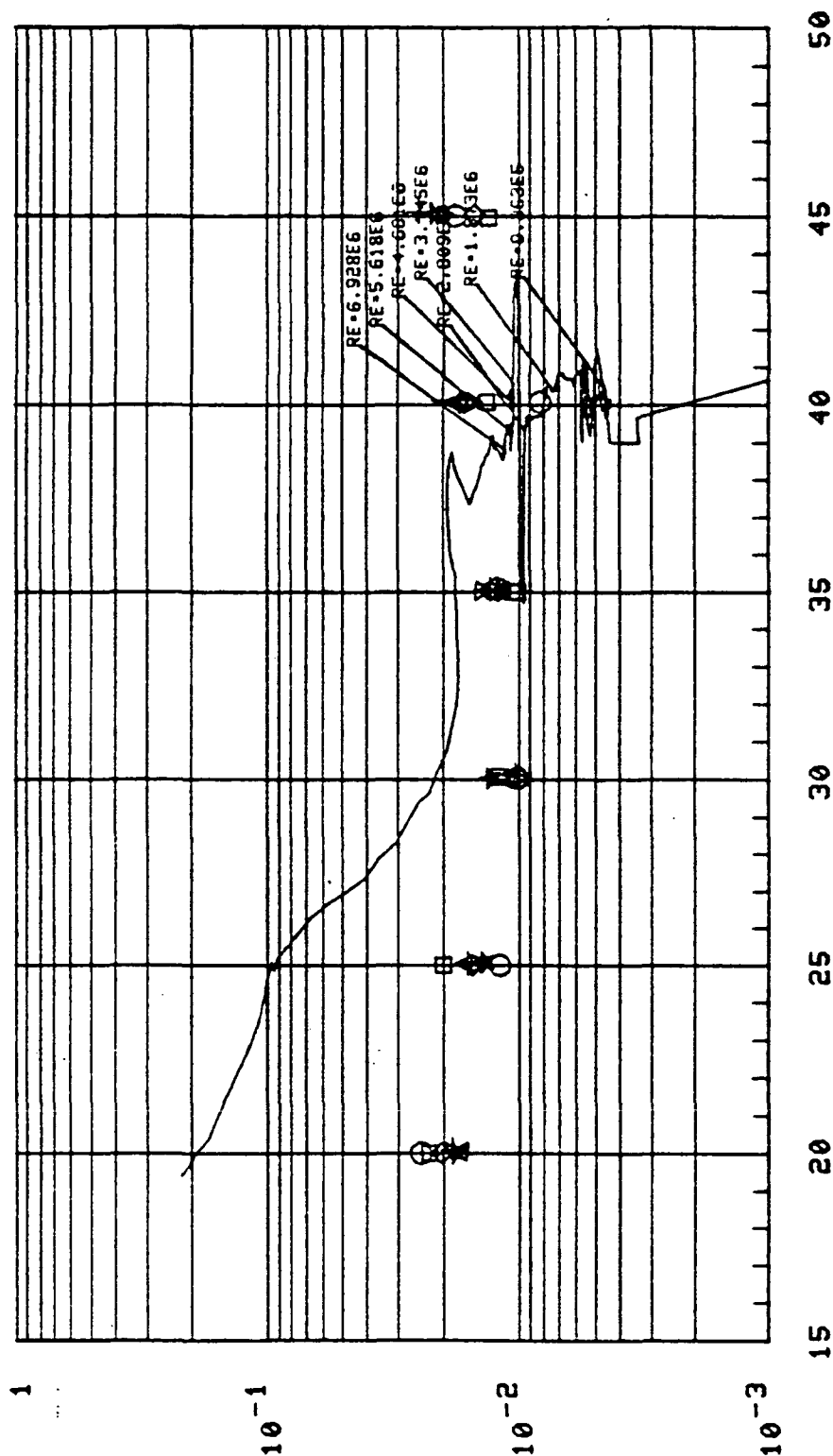
06/18/84  
BASE TIME - 1604023.000 SEC.

# STS-5 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

007T0806H/H-REF 150-1350 SEC

OH39 0.0175 SCALE RE = 0.5 E06  
 OH39 0.0175 SCALE RE = 1.0 E06  
 OH39 0.0175 SCALE RE = 1.5 E06  
 OH39 0.0175 SCALE RE = 2.0 E06  
 OH39 0.0175 SCALE RE = 2.5 E06  
 OH39 0.0175 SCALE RE = 3.0 E06  
 OH39 0.0175 SCALE RE = 3.7 E06

○ □ × △ ★ †

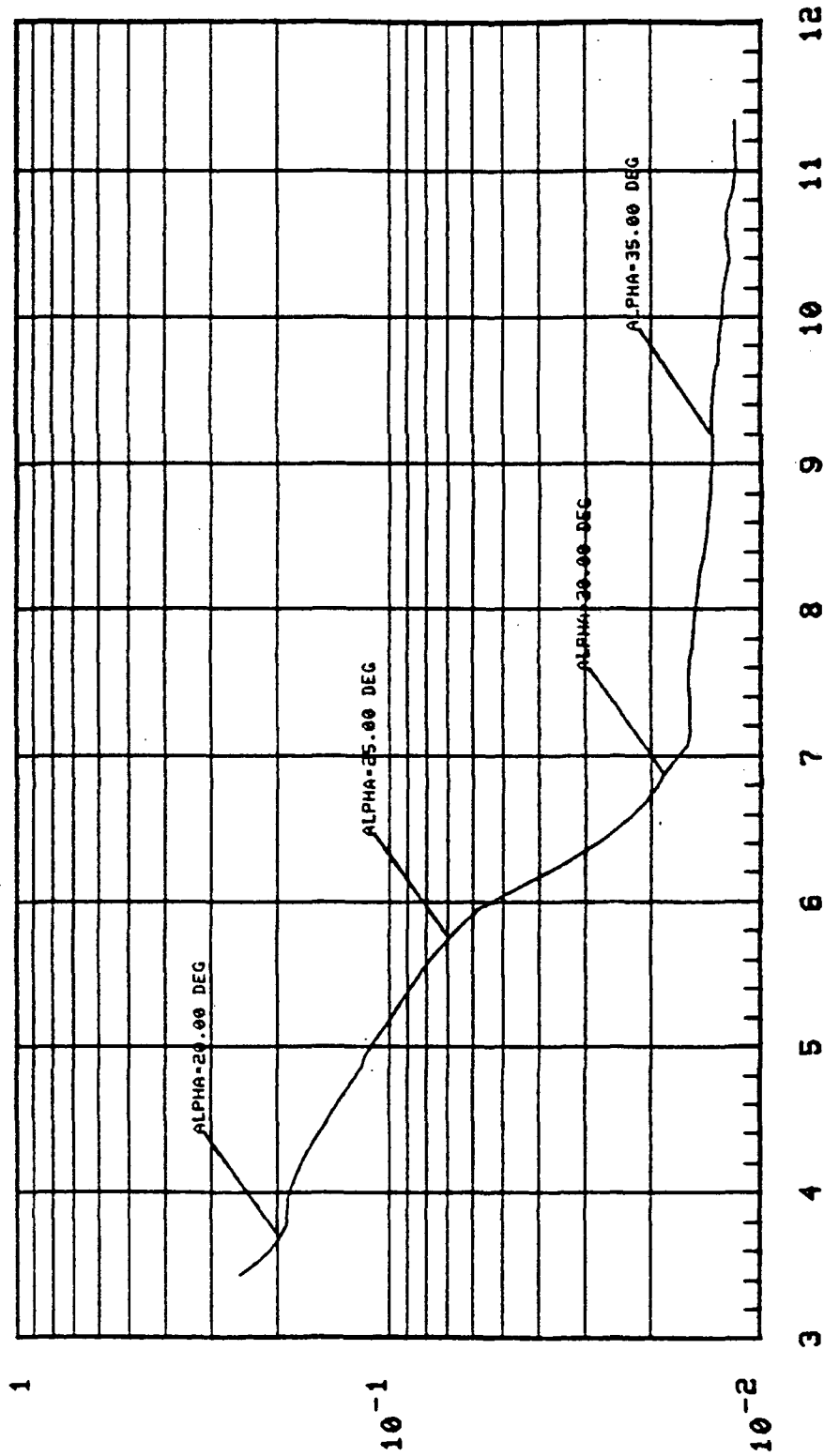


FILM COEFF - H/H-REF

ANGLE-OF-ATTACK - DEG  
 BASE TIME - 27698591.000 SEC.  
 06/19/84

# STS-1 (107 FT LENGTH CL $X/L=0.080$ ) FLIGHT PARAMETER COMPARIS

U07T9806R/H-REF 1065-1450 SEC



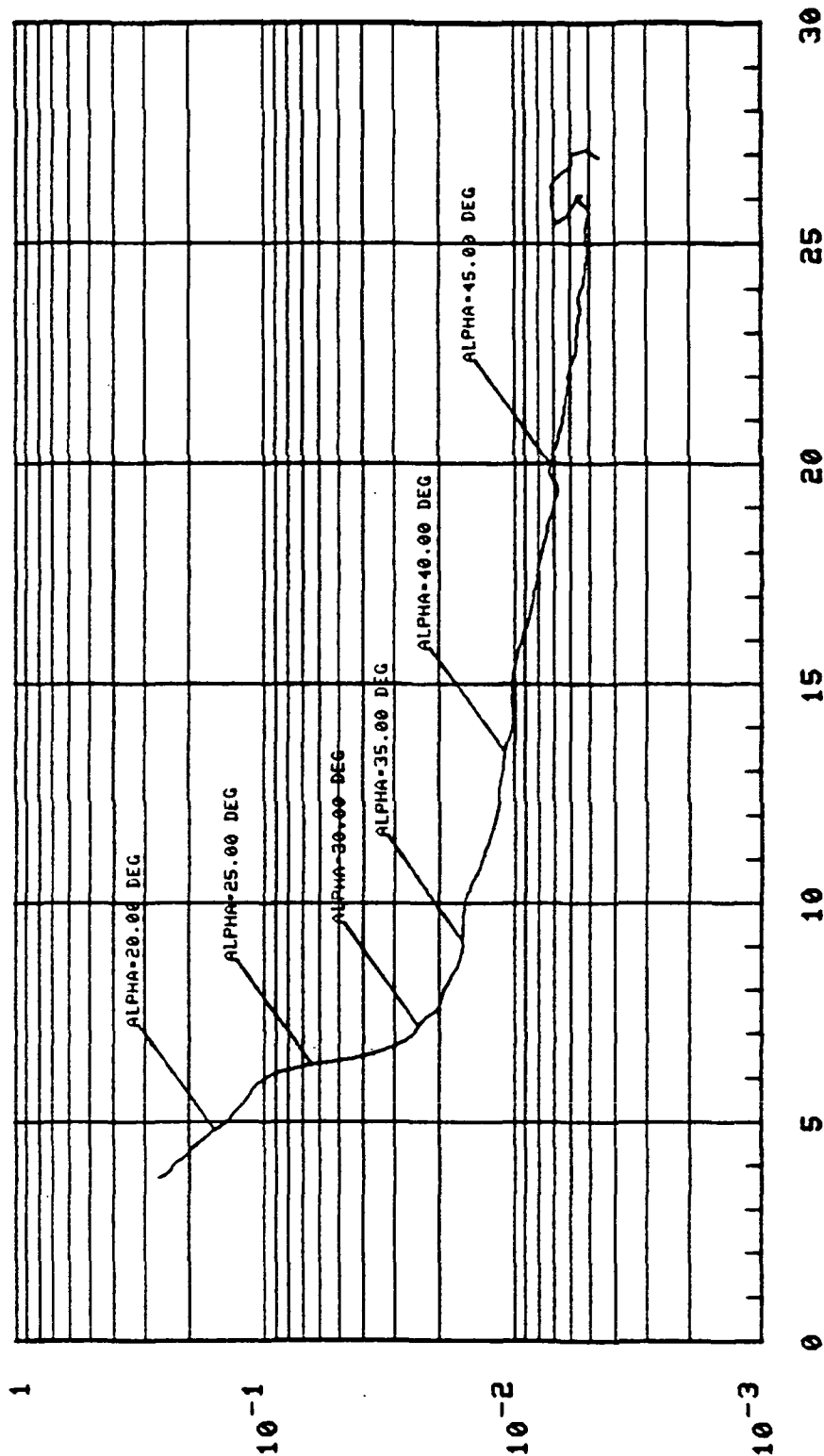
05/18/84  
BASE TIME - 09049744.000 SEC.

MACH NUMBER

FLIGHT COMPARIS - H/H-REF

# STS-2 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

U07T3806A/H-REF 200-1480 SEC

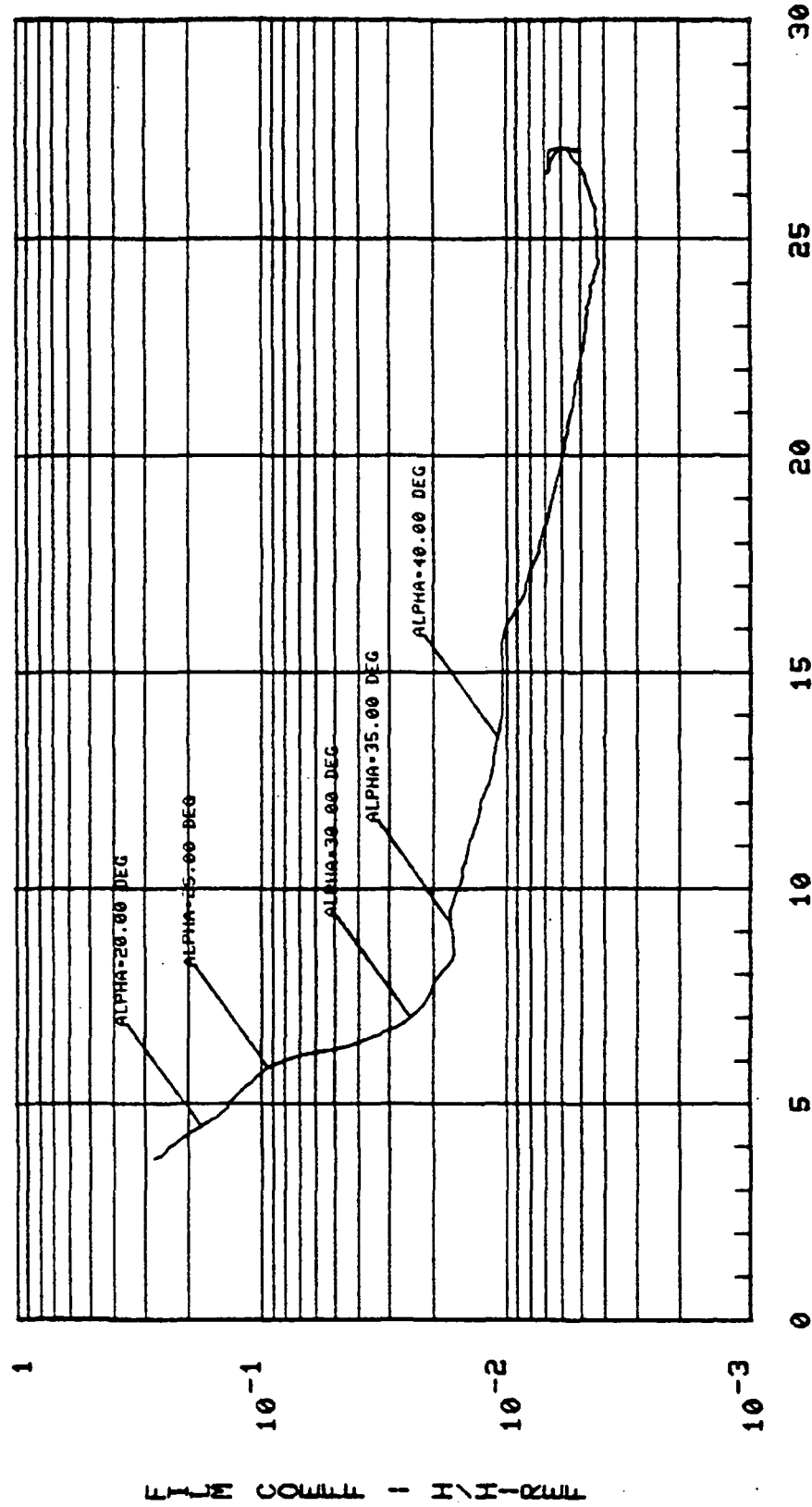


MACH NUMBER 06/18/84  
BASE TIME - 27550236.000 SEC.



# STS-3 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

U07T9806H/H-REF 200-1320 SEC

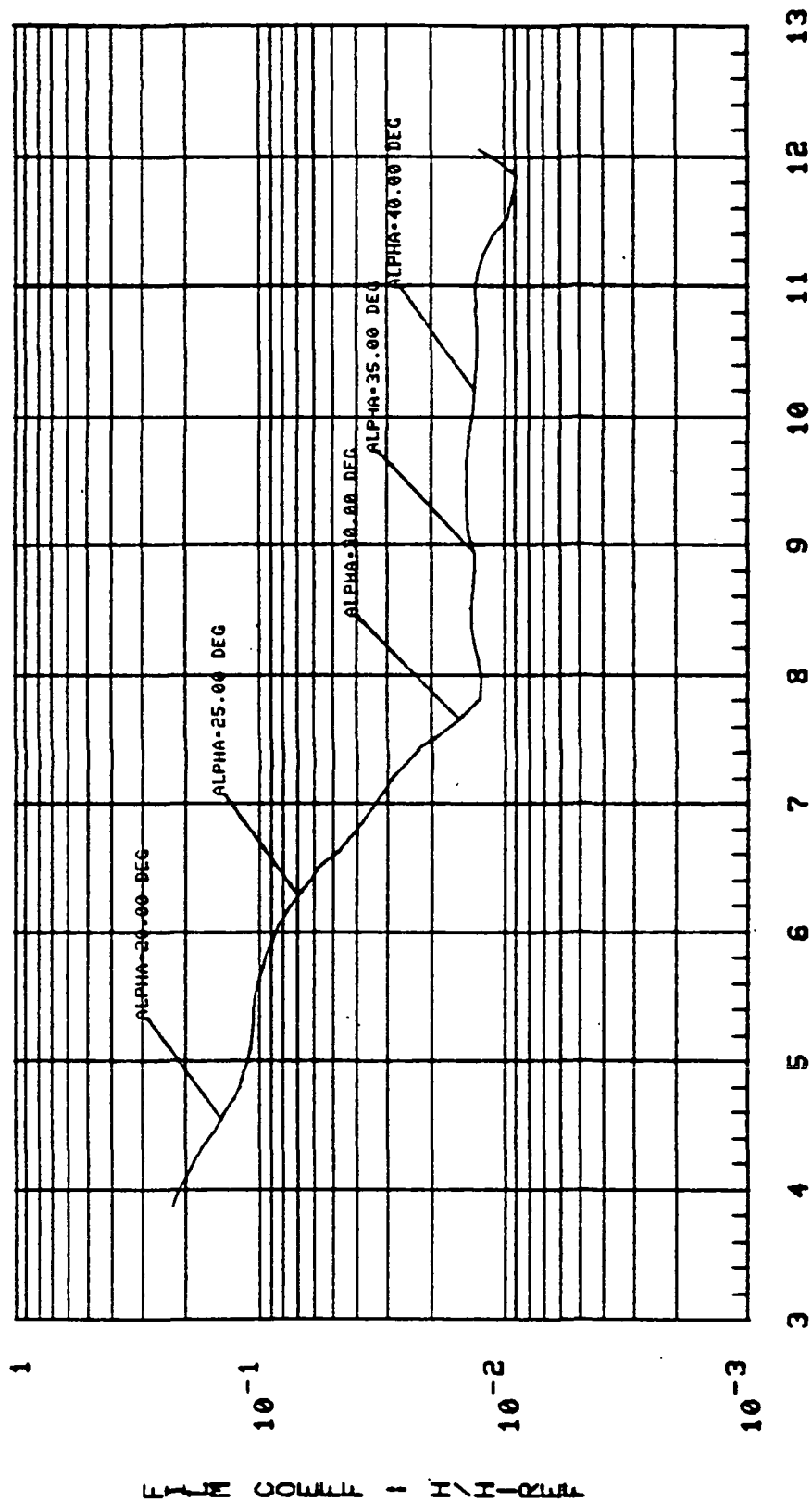


06/18/84  
BASE TIME - 07745684.000 SEC.

MACH NUMBER

# STS-4 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

U07T98064/H-PEF 965-1300 SEC

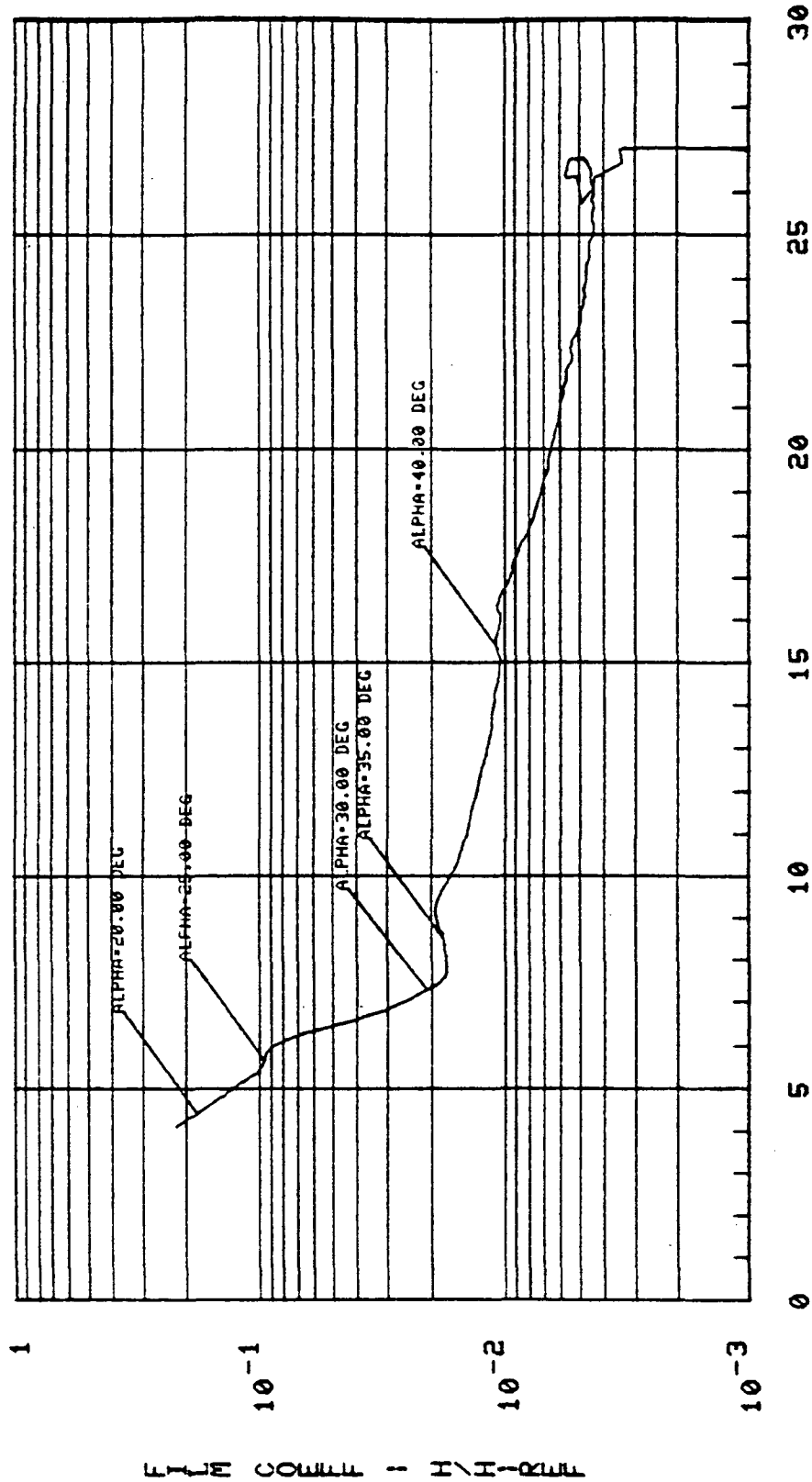


06/18/84  
BASE TIME - 1604023.000 SEC.

MACH NUMBER

# STS-5 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

007T9306H/H-REF 150-1350 SEC



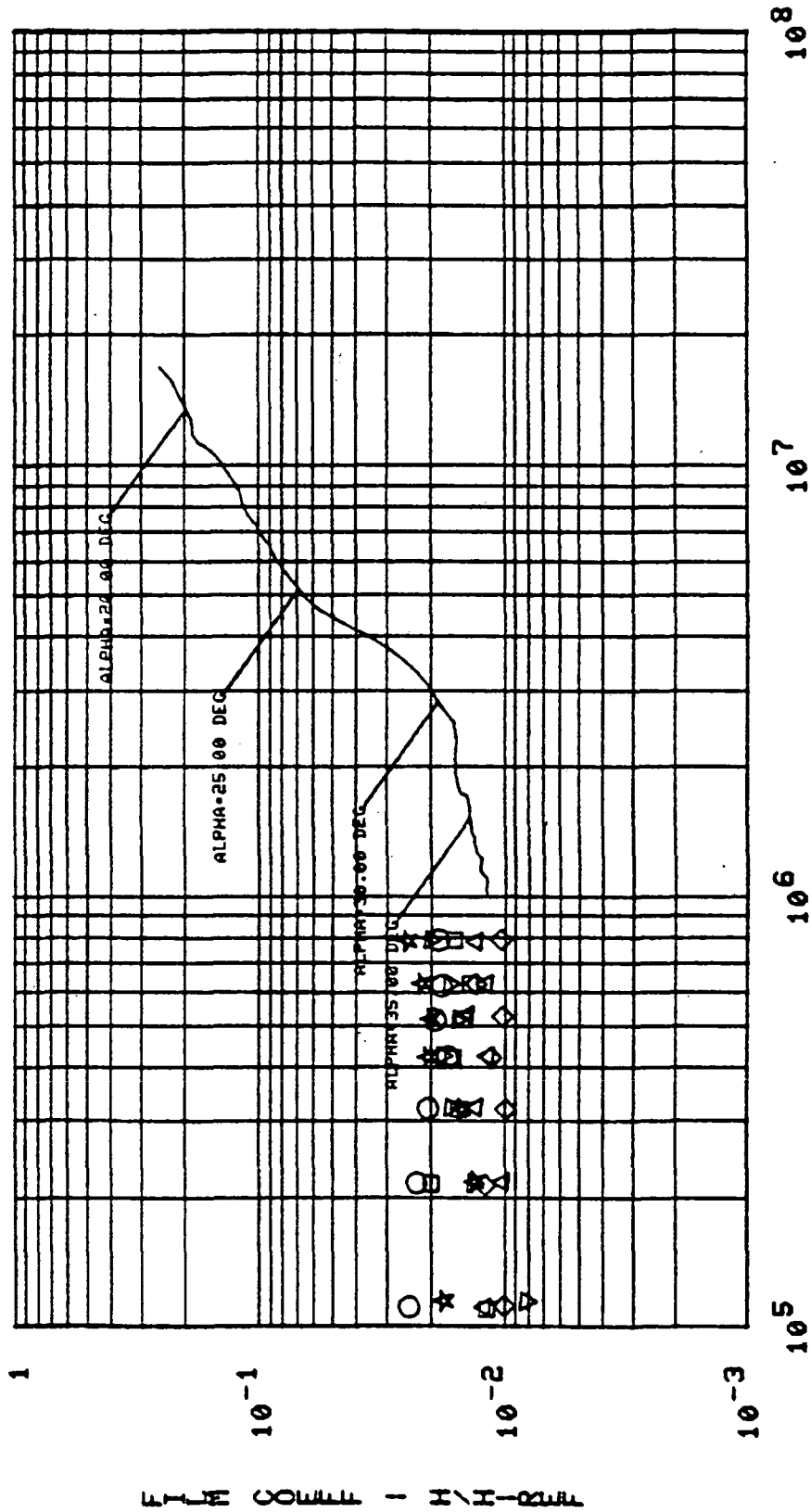
MACH NUMBER  
06/19/84  
BASE TIME - 27698591.000 SEC.

# STS-1 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

U07T9806A/H-REF 1065-1460 SEC

- 0H39 ALPHA - 20 DEGREES
- 0H39 ALPHA - 25 DEGREES
- 0H39 ALPHA - 30 DEGREES
- 0H39 ALPHA - 35 DEGREES
- 0H39 ALPHA - 40 DEGREES
- 0H39 ALPHA - 45 DEGREES

○ □ × △



06/18/84  
BASE TIME - 09049744.000 SEC.

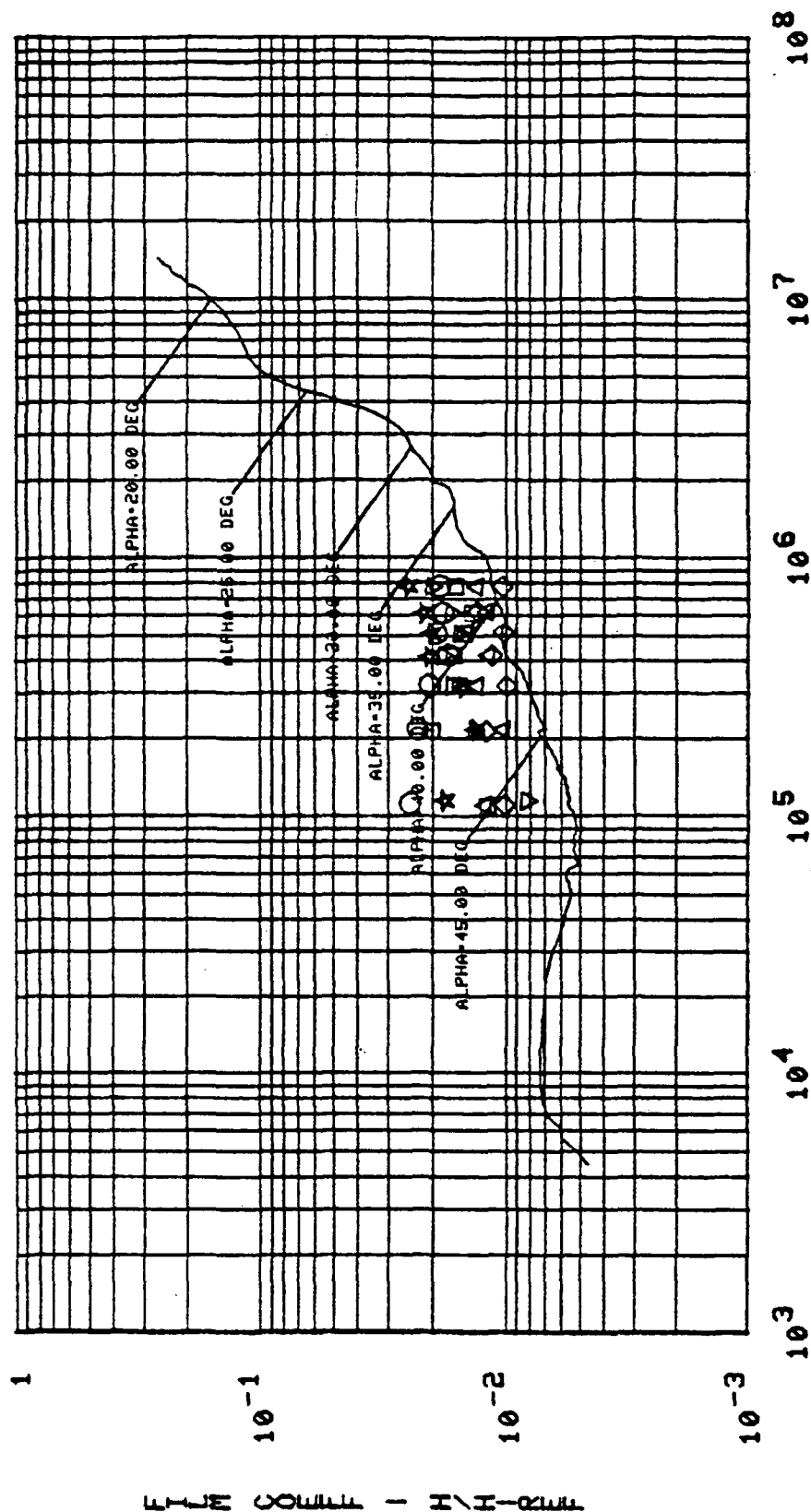
REYNOLDS NUMBER (NS)

# STS-2 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

OH39 ALPHA - 20 DEGREES  
 OH39 ALPHA - 25 DEGREES  
 OH39 ALPHA - 30 DEGREES  
 OH39 ALPHA - 35 DEGREES  
 OH39 ALPHA - 40 DEGREES  
 OH39 ALPHA - 45 DEGREES

○ □ ◇ × ★

007798064/H-REF 200-1480 SEC



REYNOLDS NUMBER (NS)

BASE TIME - 27550236.000 SEC.

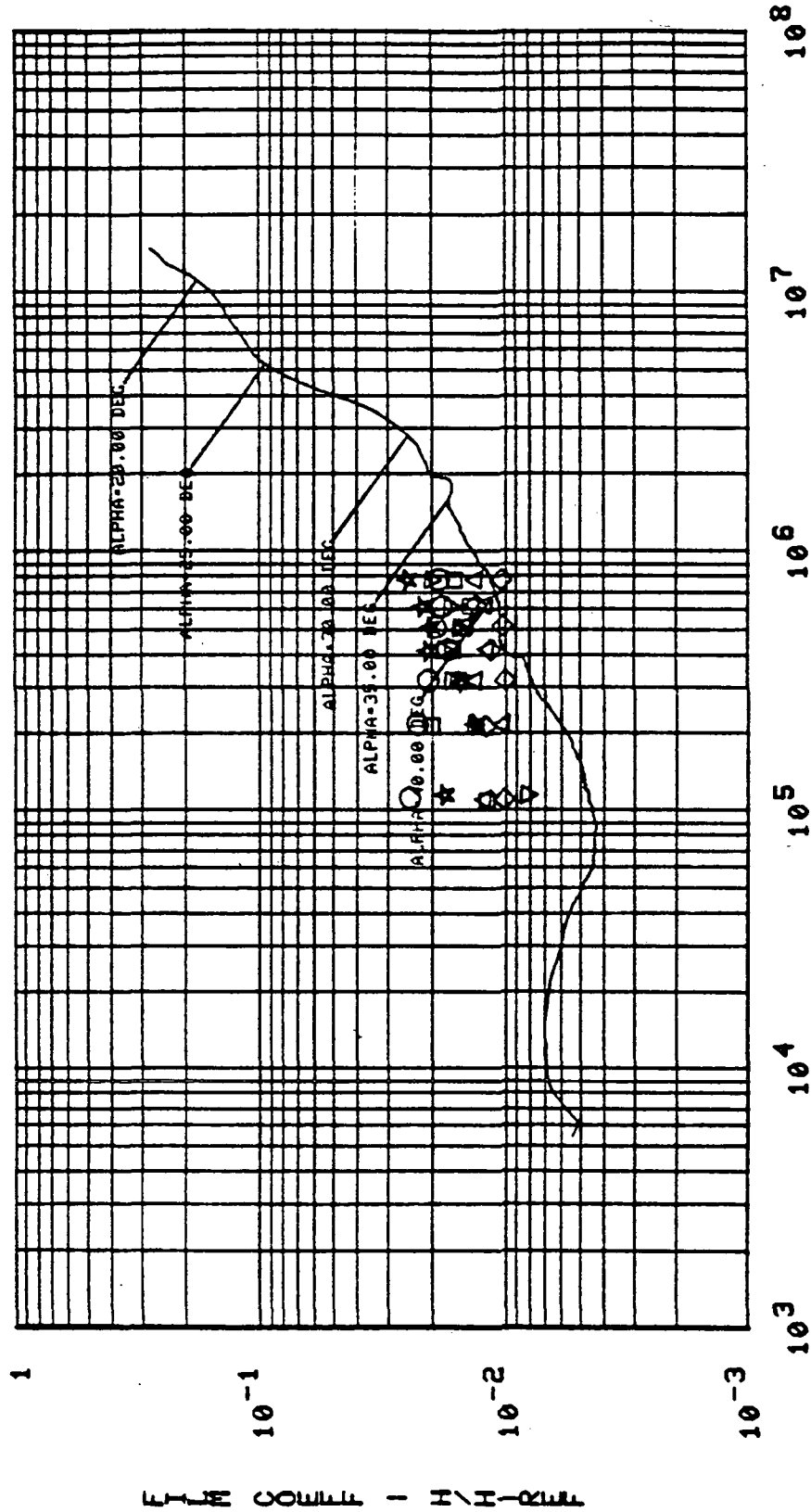
06/18/84

# STS-3 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

U07T9806A/H-REF 200-1380 SEC

- QH39 ALPHA - 20 DEGREES
- QH39 ALPHA - 25 DEGREES
- QH39 ALPHA - 30 DEGREES
- QH39 ALPHA - 35 DEGREES
- QH39 ALPHA - 40 DEGREES
- QH39 ALPHA - 45 DEGREES

○ □ × ★



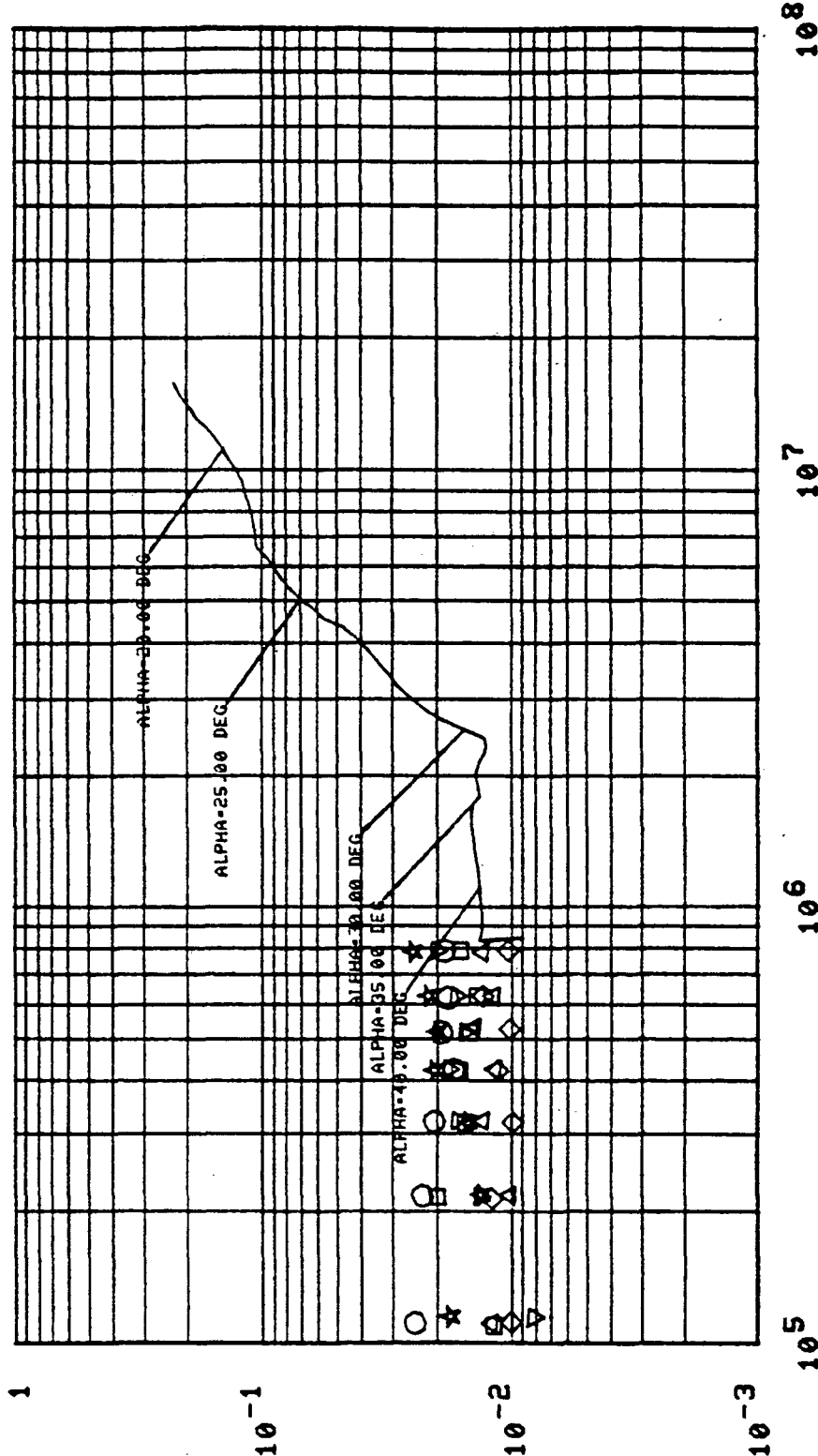
FLY H COEFF - H/H-REF

# STS-4 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

U07T3805A/H-REF 965-1300 SEC

- QH39 ALPHA - 20 DEGREES
- QH39 ALPHA - 25 DEGREES
- QH39 ALPHA - 30 DEGREES
- QH39 ALPHA - 35 DEGREES
- QH39 ALPHA - 40 DEGREES
- QH39 ALPHA - 45 DEGREES

○ □ △ ★



FLIGHT CORRECTION - H/H-REF

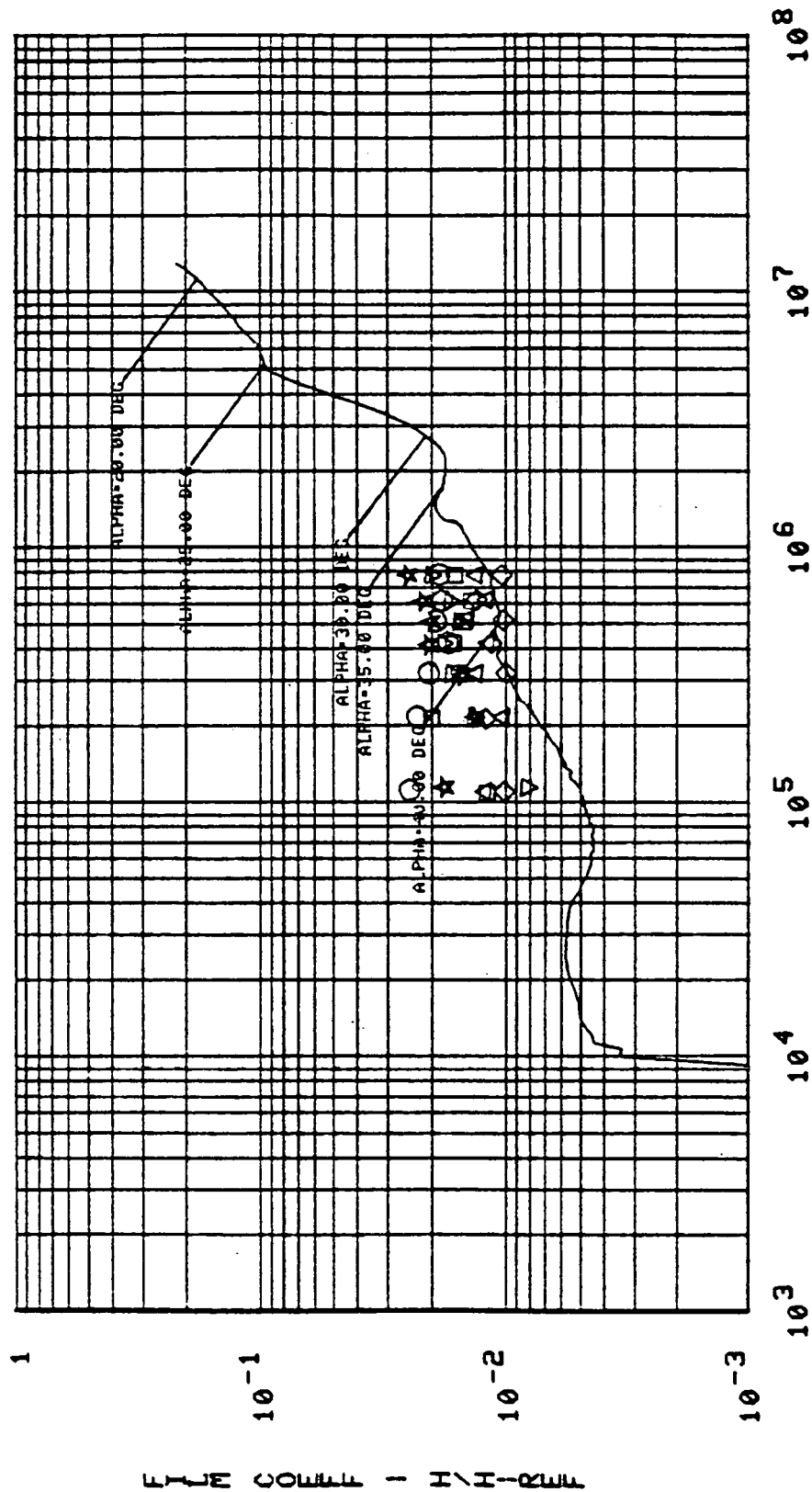
REYNOLDS NUMBER (NS) 06/18/84 BASE TIME - 16040423.000 SEC.

# STS-5 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

QH39 ALPHA • 20 DEGREES  
 QH39 ALPHA • 25 DEGREES  
 QH39 ALPHA • 30 DEGREES  
 QH39 ALPHA • 35 DEGREES  
 QH39 ALPHA • 40 DEGREES  
 QH39 ALPHA • 45 DEGREES

007T9806A/H-REF 150-1350 SEC

○ ◇ × ★



REYNOLDS NUMBER (NS)

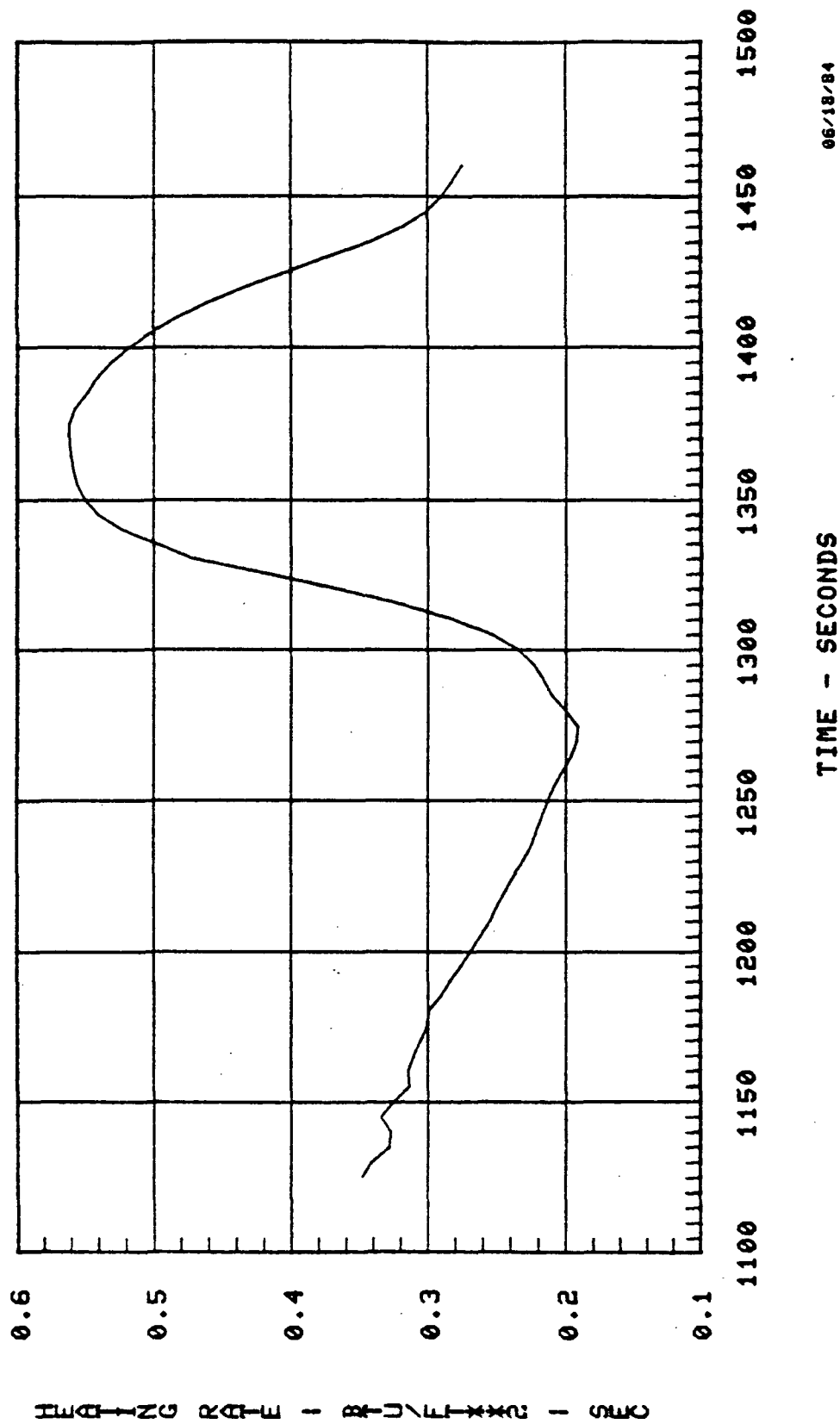
BASE TIME • 2768591.000 SEC.

06/19/84



# STS-1 (107 FT LENGTH CL $X/L=0.080$ ) FLIGHT PARAMETER COMPARIS

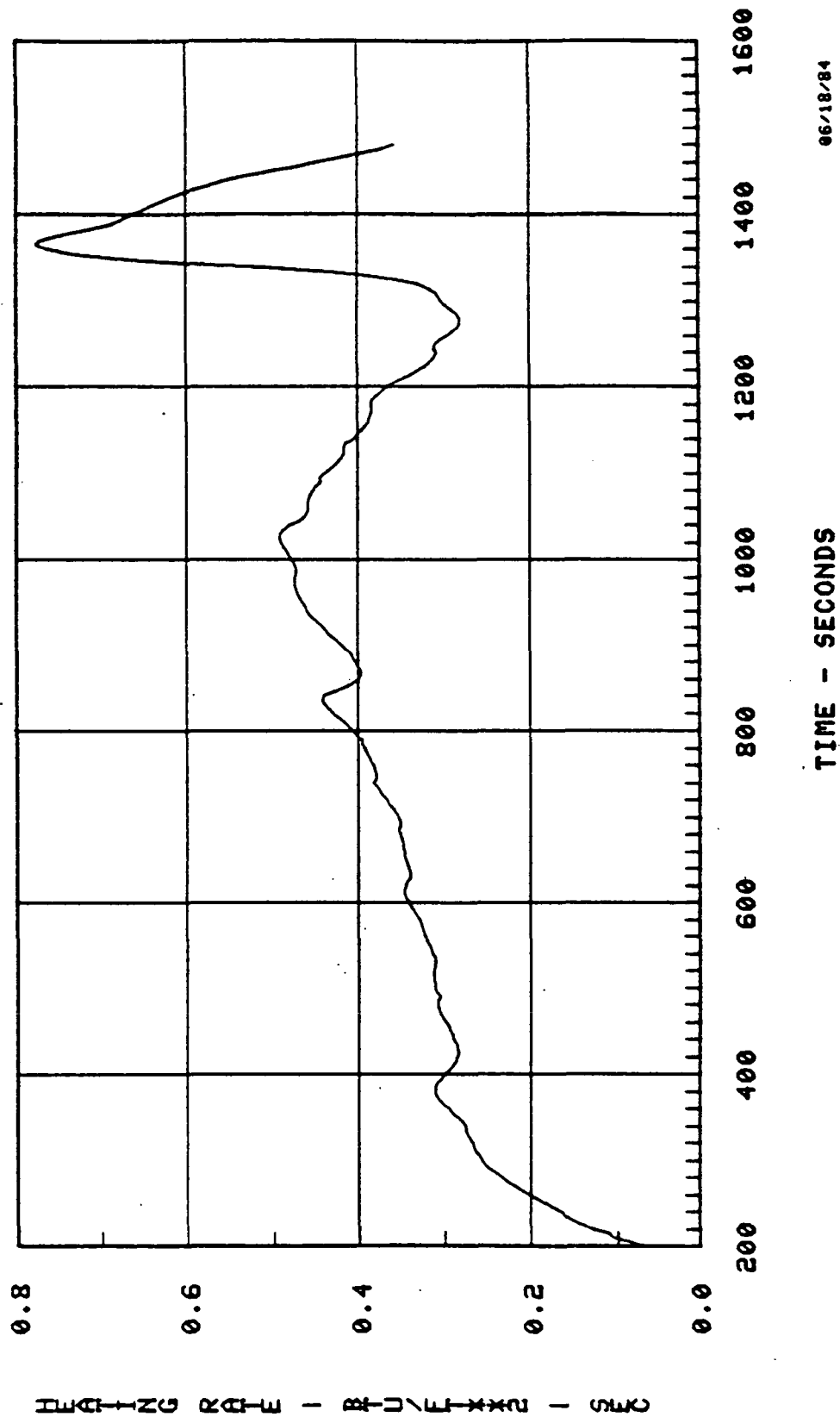
U07T9806A



06/18/84

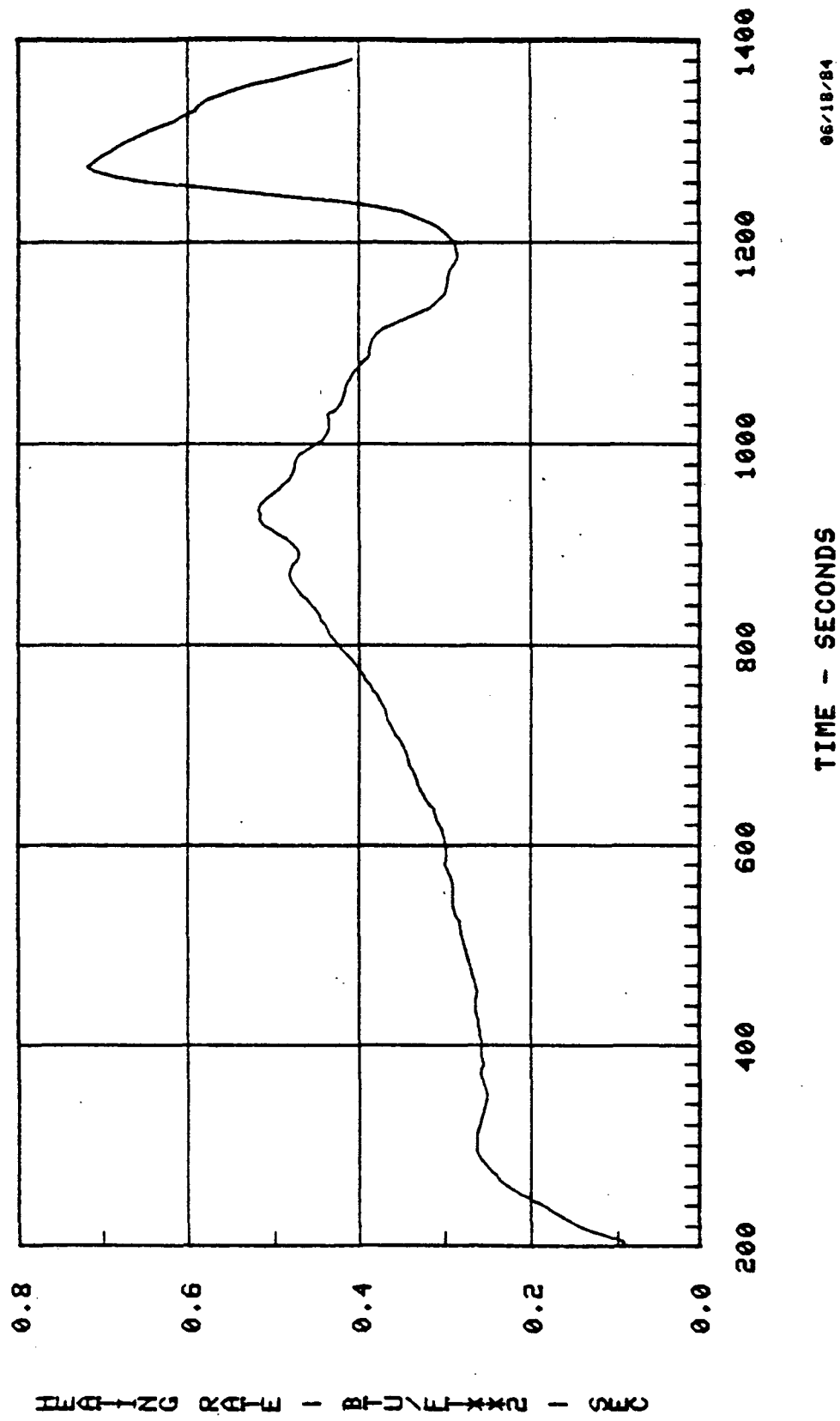
# STS-2 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

U07T9806A



# STS-3 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

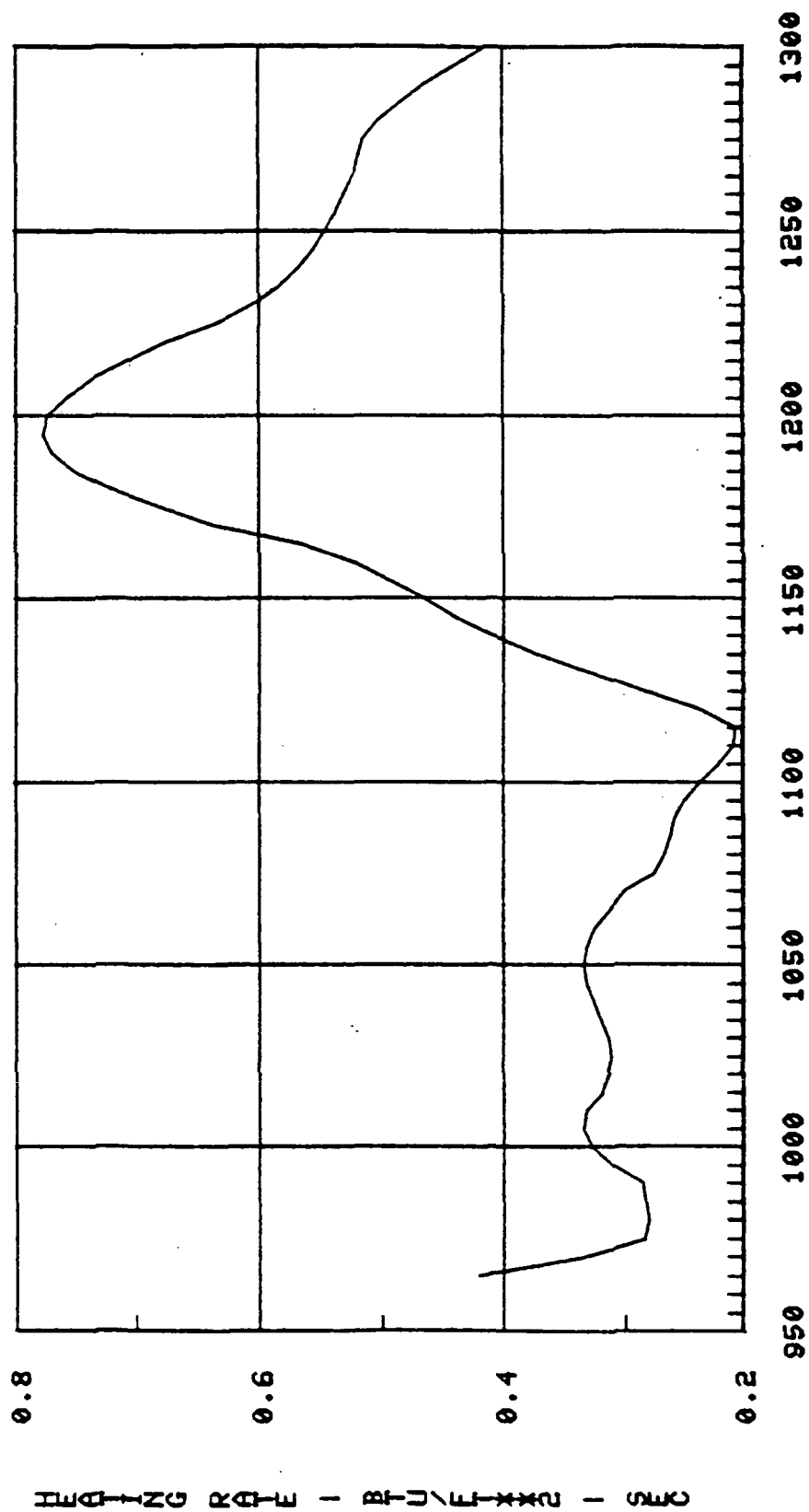
U07T9806A



06/18/84

# STS-4 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

U07T9806A

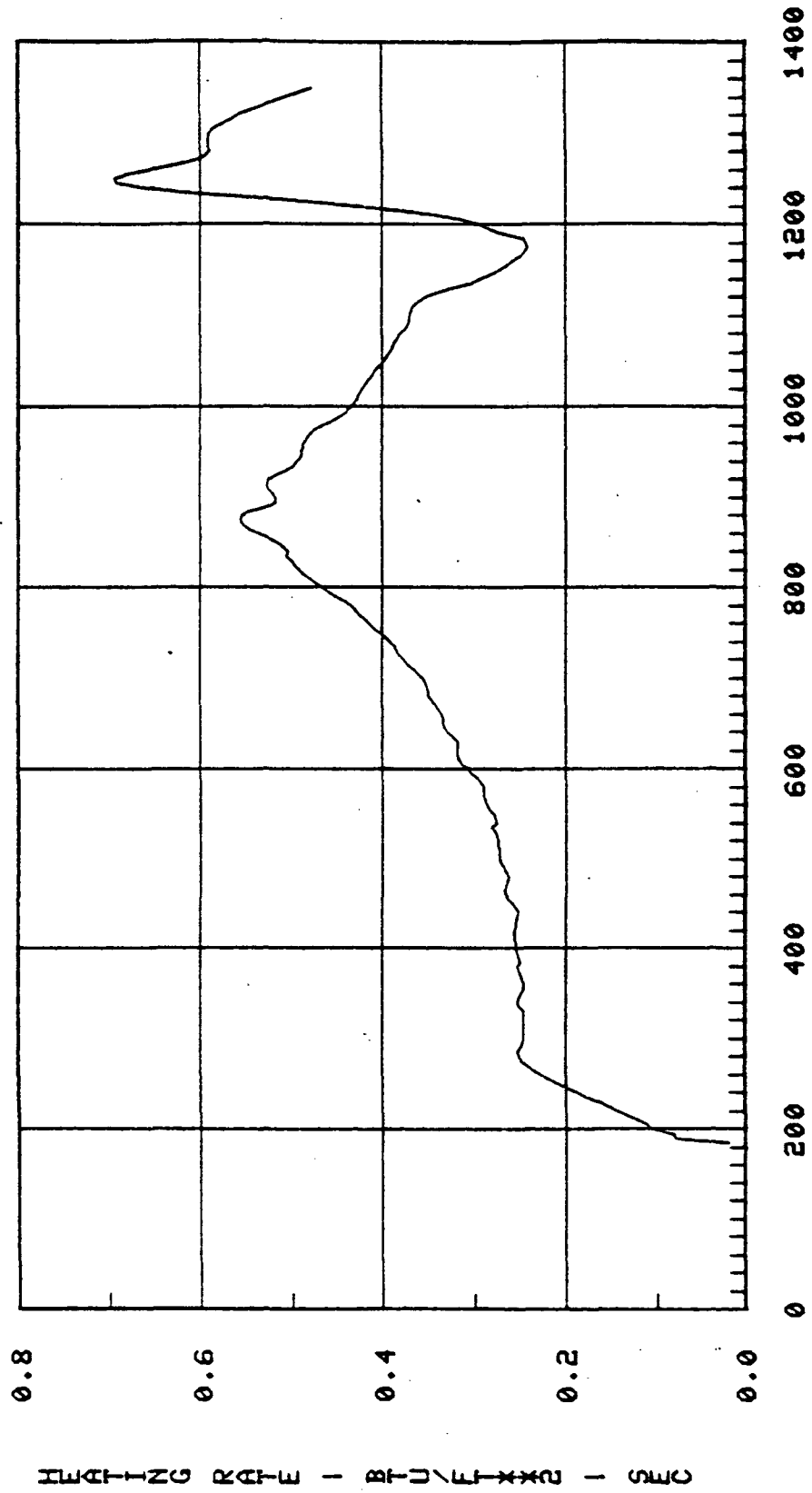


TIME - SECONDS

06/18/84

# STS-5 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

1107T98064

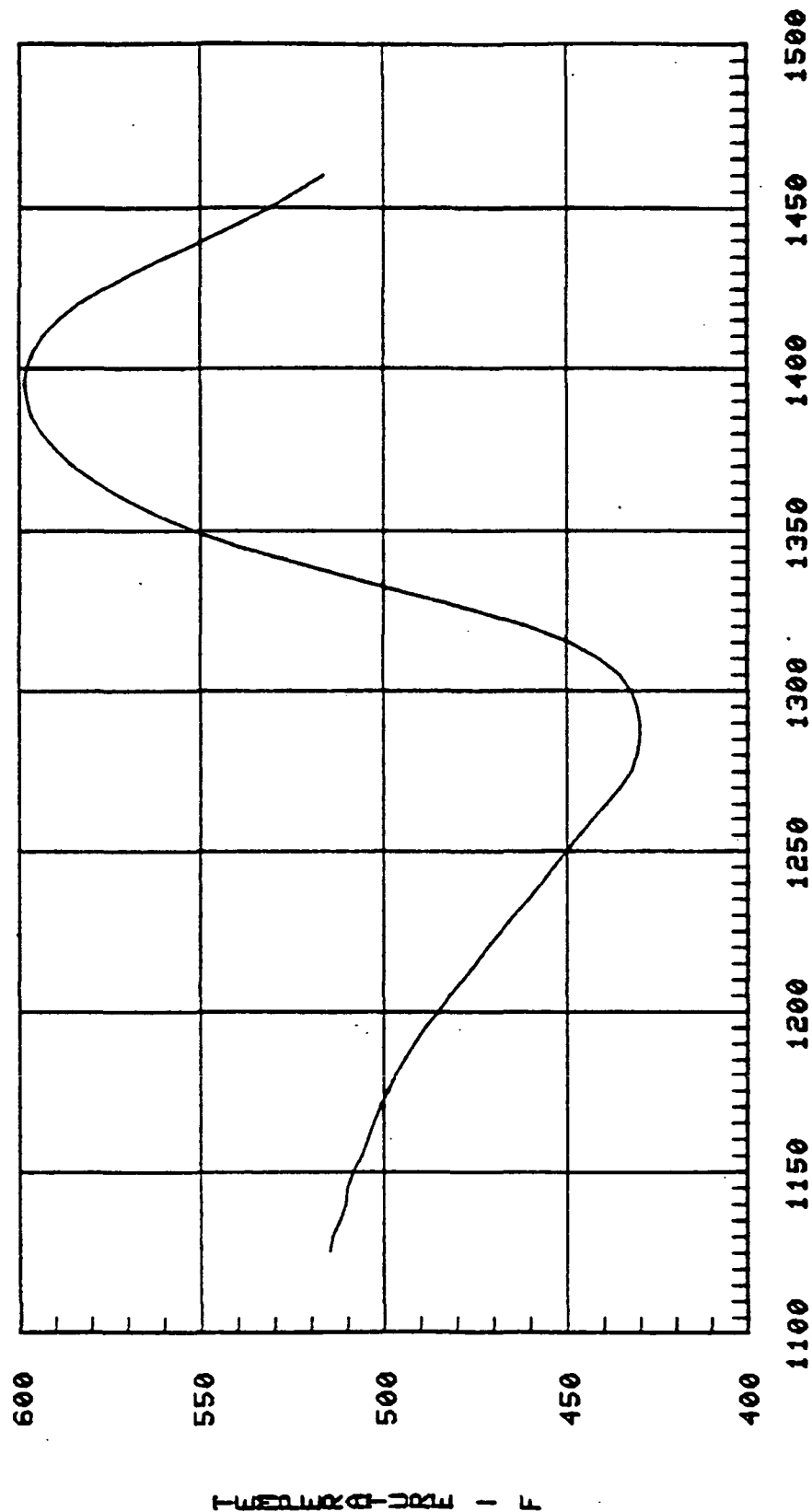


TIME - SECONDS

06/19/84

# STS-1 (107 FT LENGTH CL $X/L=0.080$ ) FLIGHT PARAMETER COMPARIS

U07T9806A

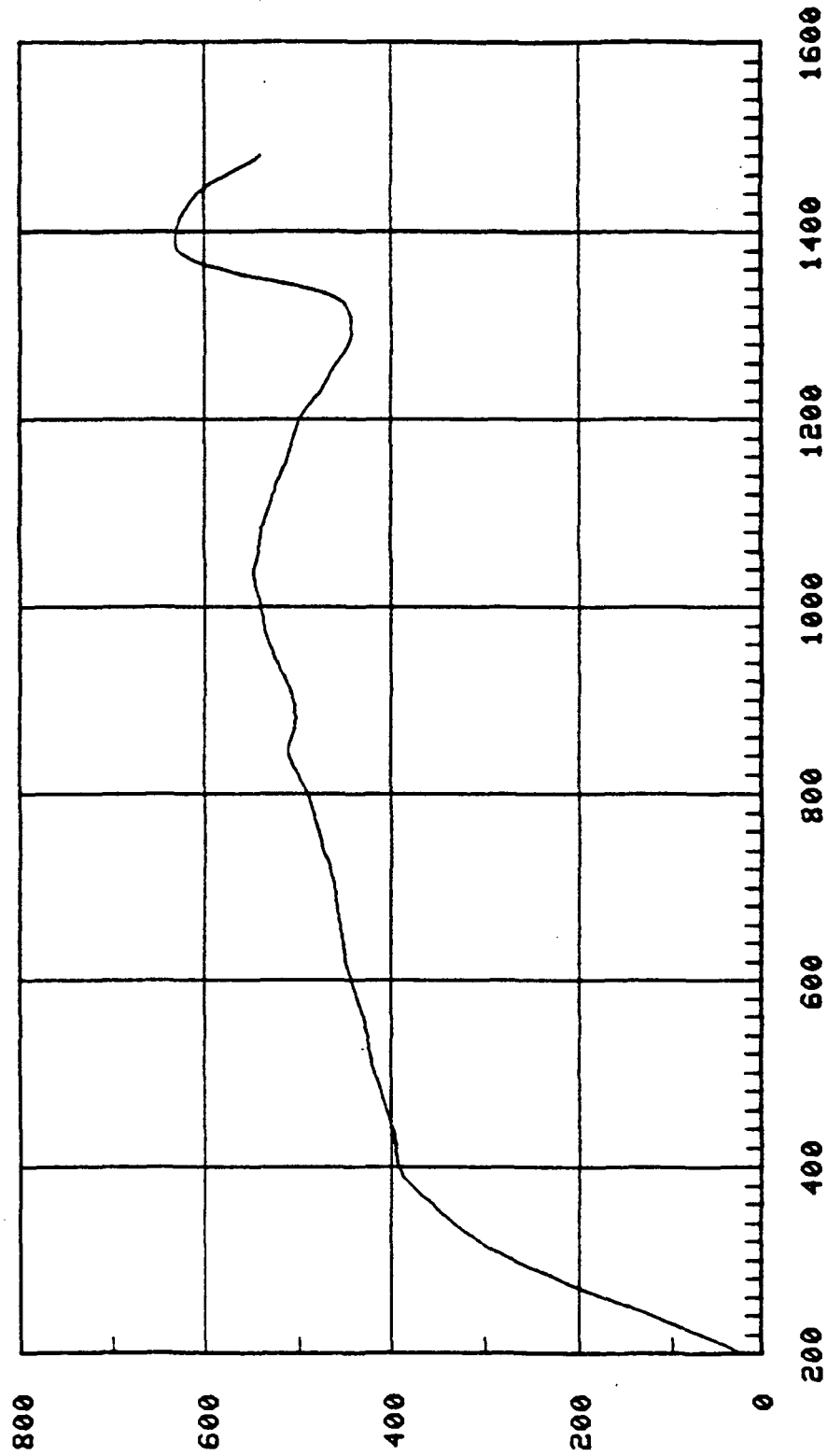


TIME - SECONDS

06/18/84

# STS-2 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

U07T9806A



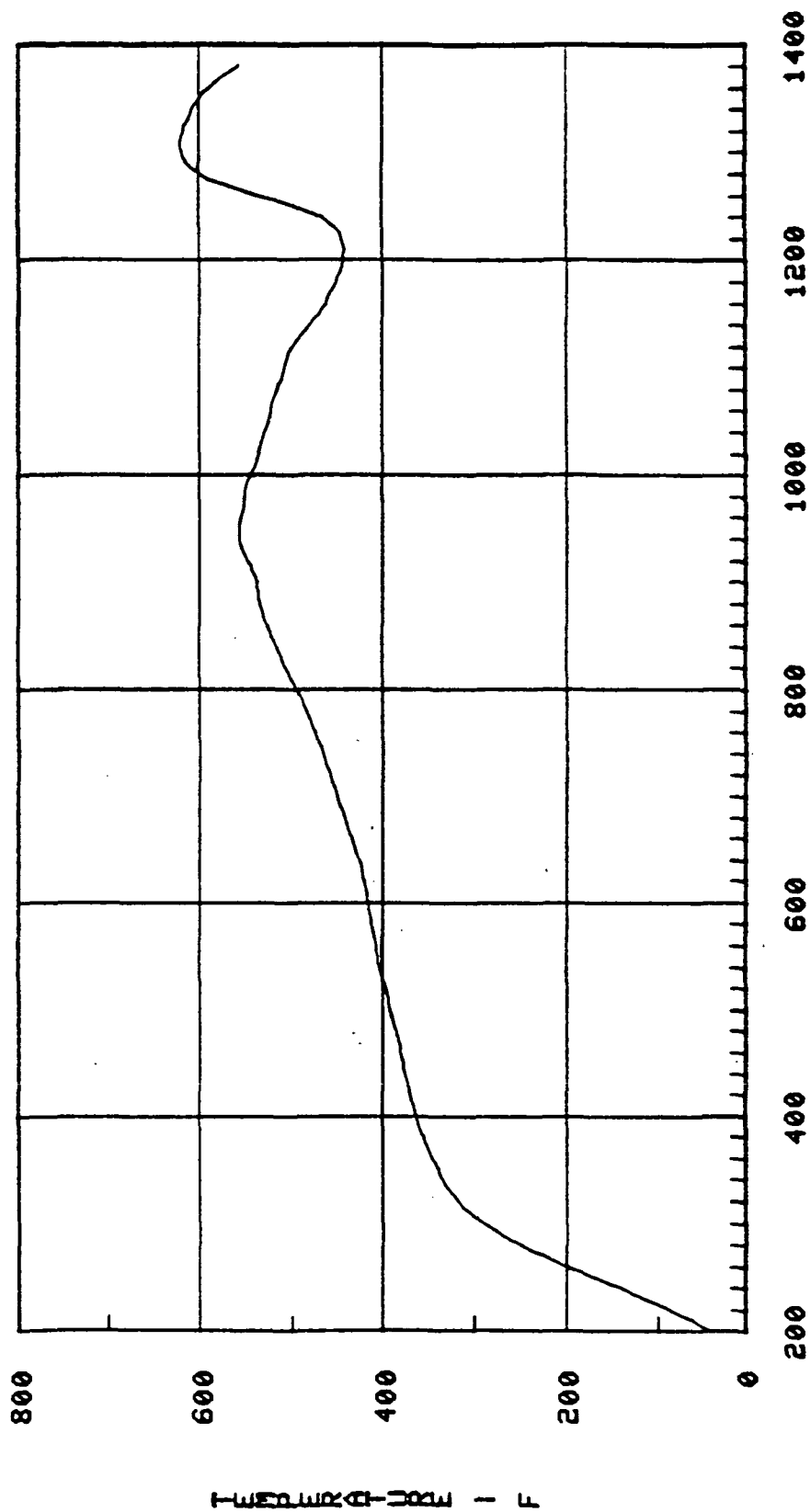
TIME - SECONDS

06/18/84

FEEDBACK - F

# STS-3 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

U07T9806A



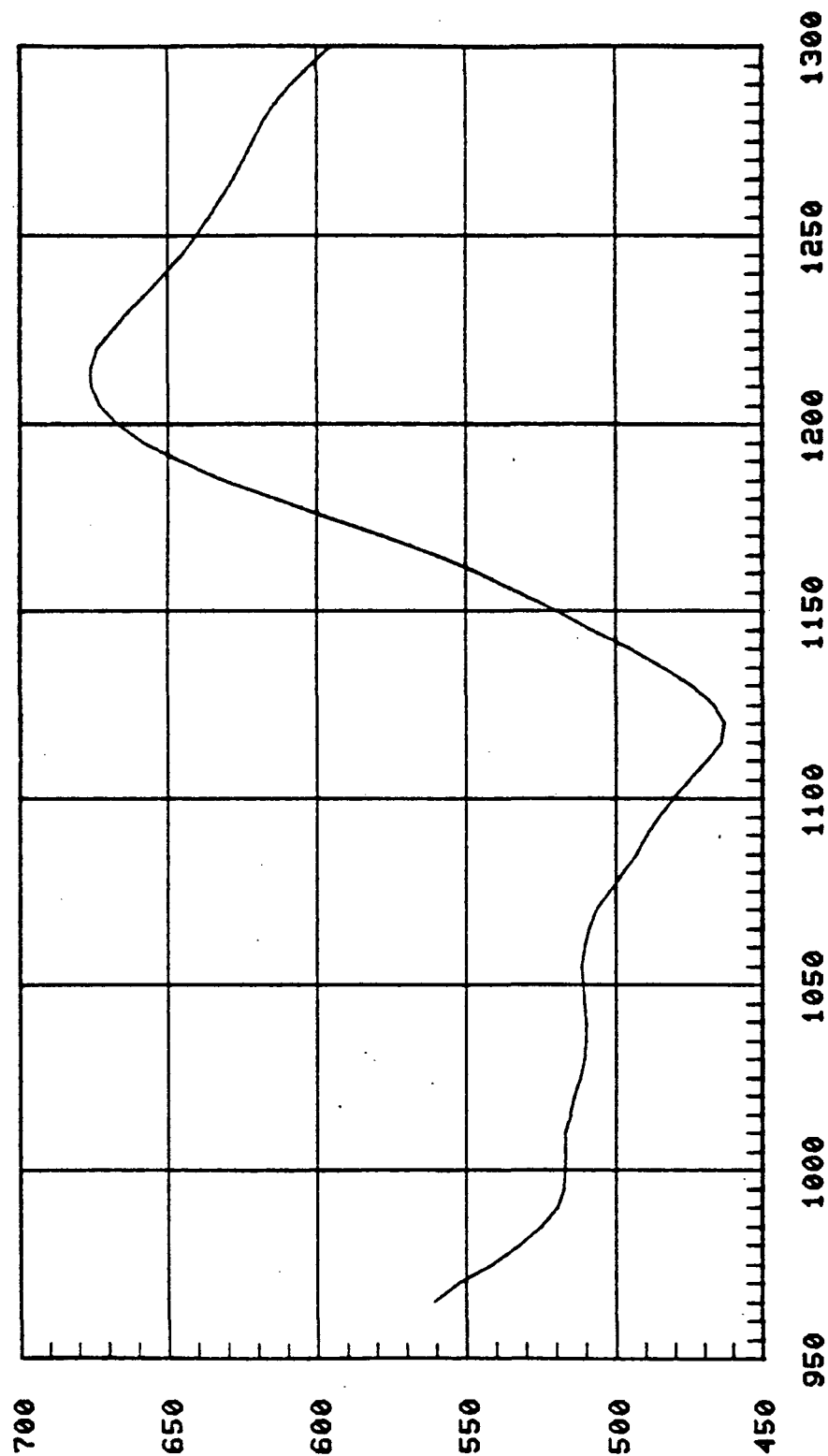
TIME - SECONDS

06/18/84



# STS-4 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

U07T9806A

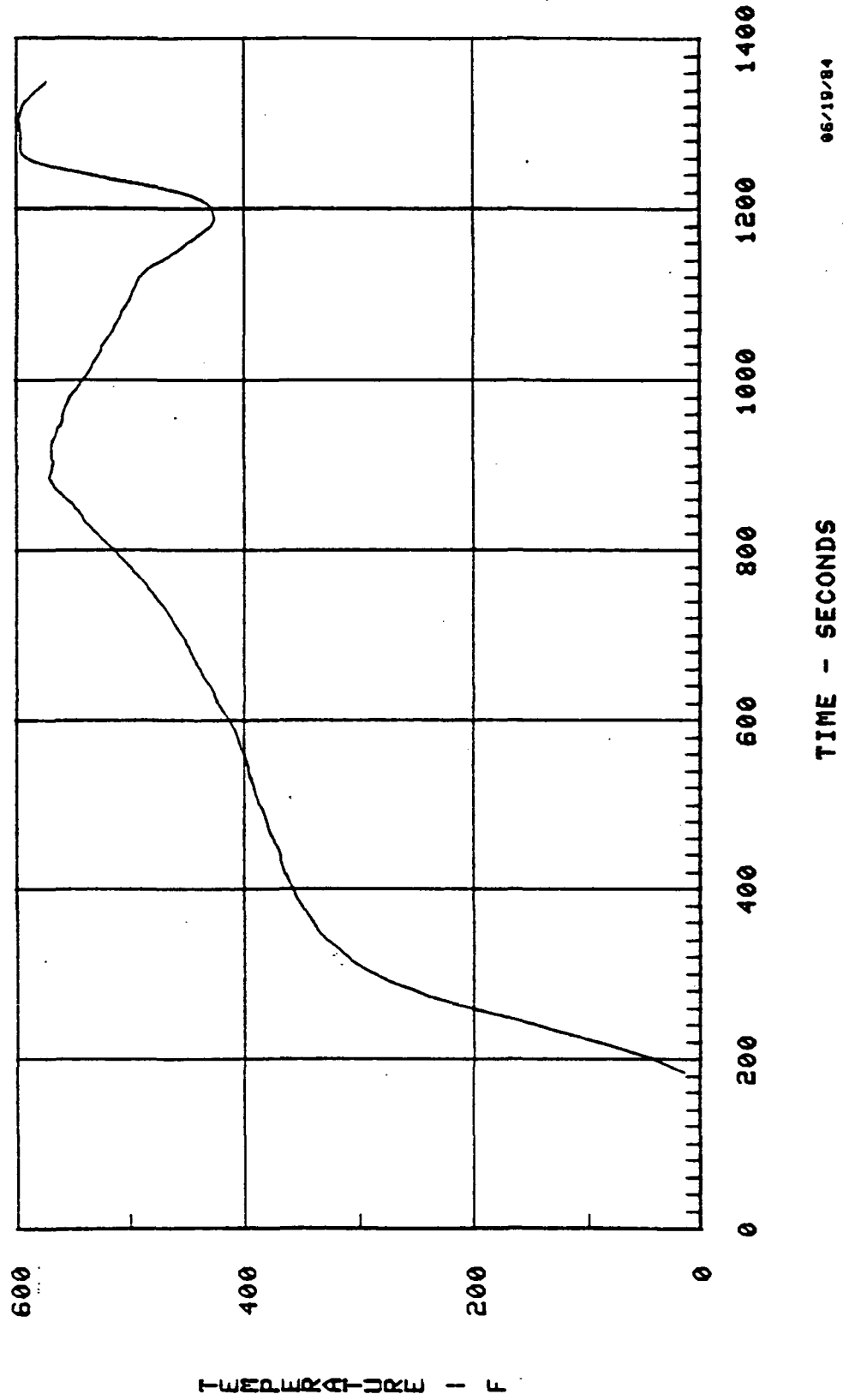


TIME - SECONDS

06/18/84

# STS-5 (107 FT LENGTH CL X/L=0.080) FLIGHT PARAMETER COMPARIS

U67T9806A

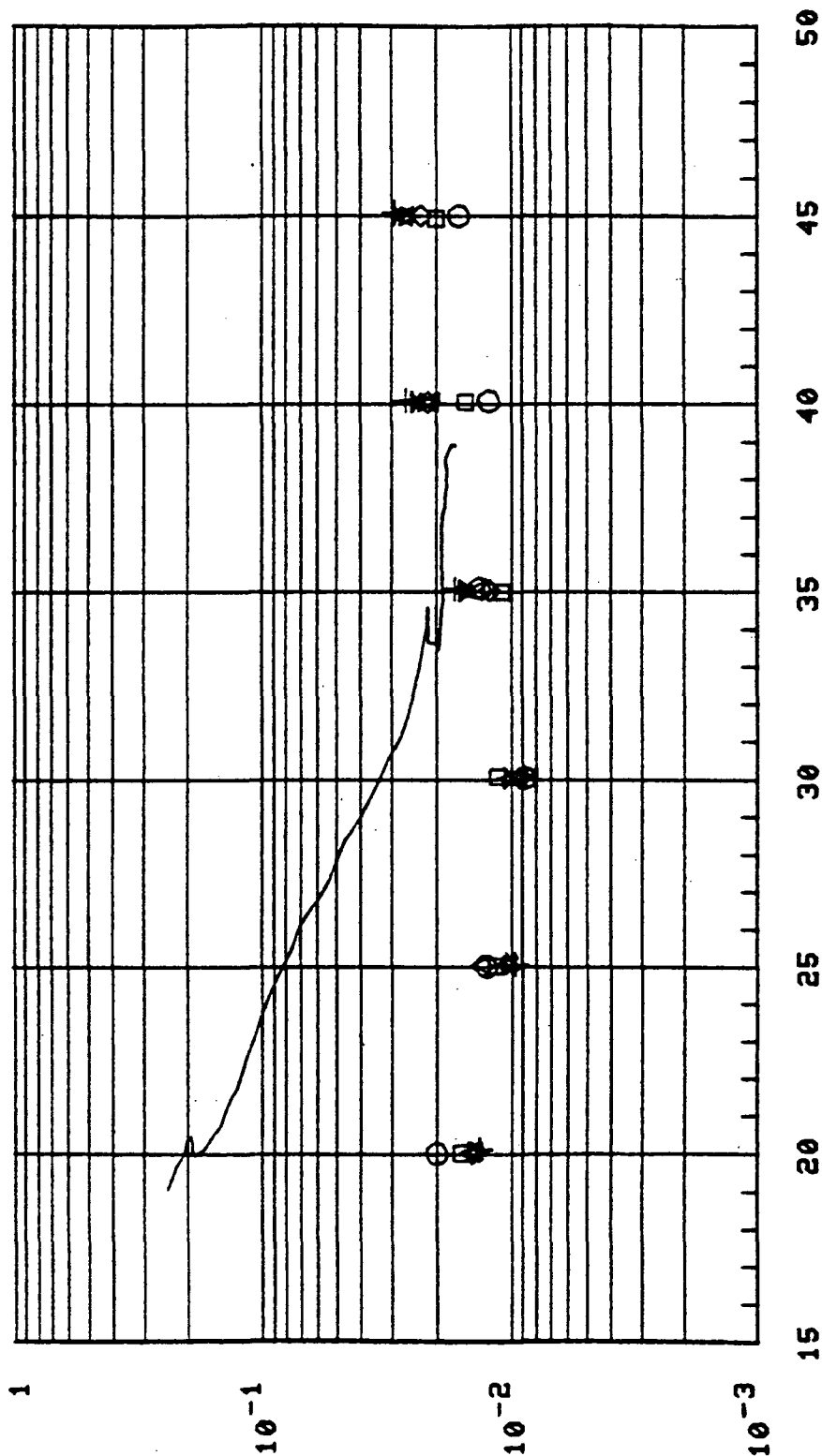


# STS-1 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

U07T9808A/H-REF 1065-1460 SEC

0H39 0.0175 SCALE RE - 0.5 E06  
 0H39 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H39 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

○ □ × △ ★



FLIGHT COMPARE - H/H-REF

06/18/84  
BASE TIME - 09049744.000 SEC.

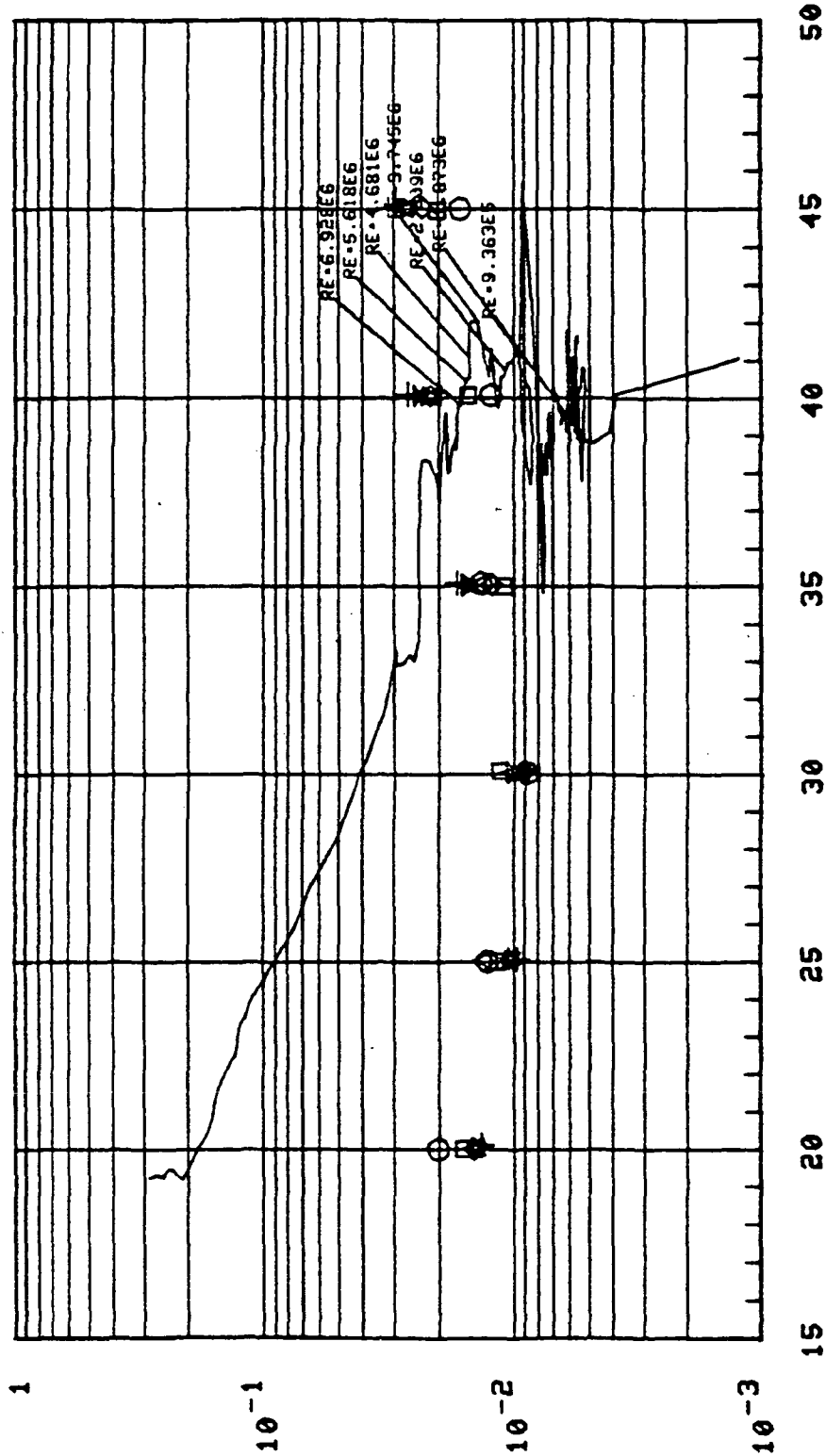
ANGLE-OF-ATTACK - DEG

# STS-2 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

0H39 0.0175 SCALE RE - 0.5 E06  
 0H39 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H39 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

U07T9808A/H-REF 200-1480 SEC

○ □ × △ ★ +



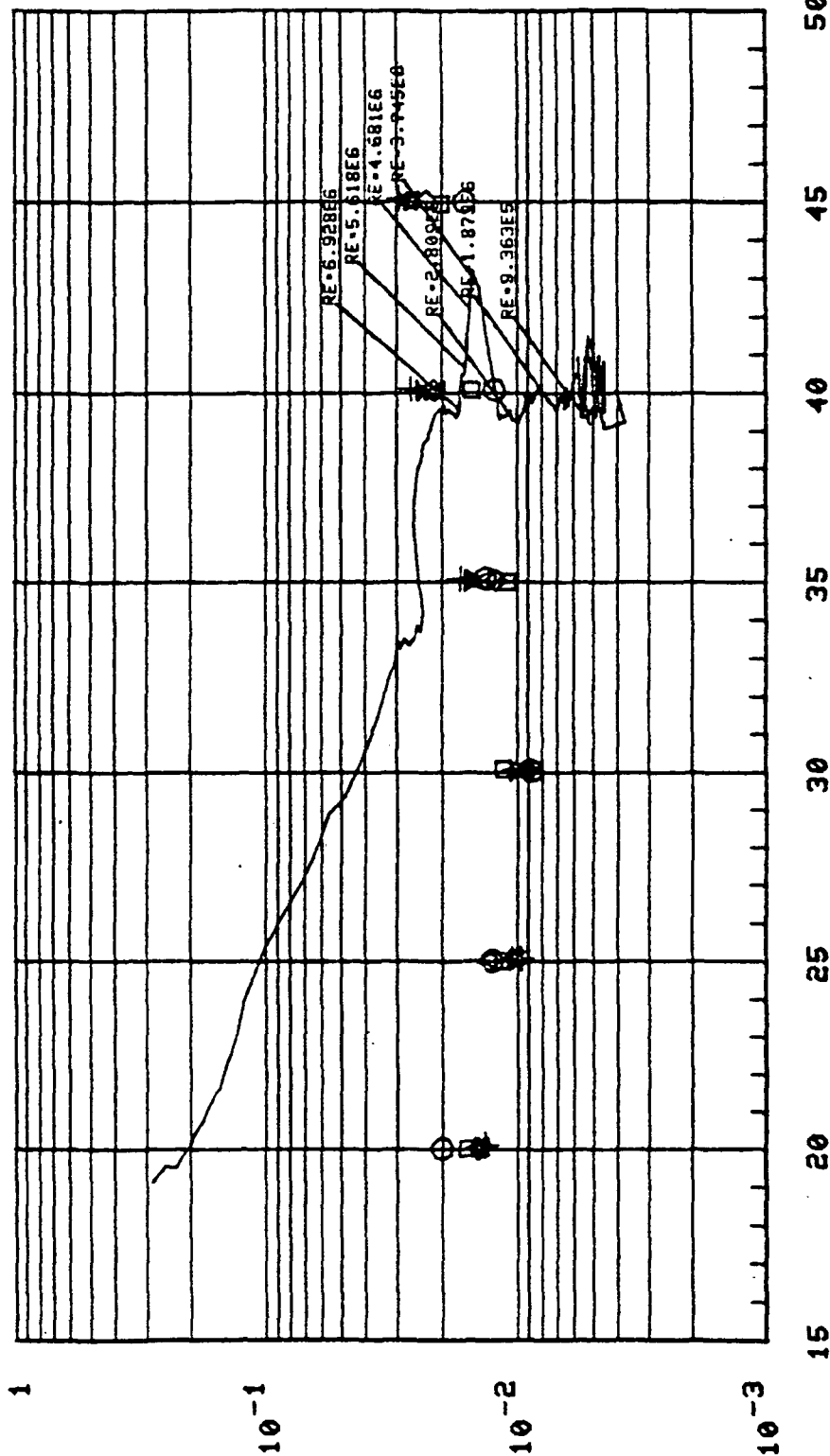
CL X/L=0.098

# STS-3 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

0H39 0.0175 SCALE RE - 0.5 E06  
 0H39 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H39 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

U07T9808A/H-REF 200-1380 SEC

○ □ × +  
 ○ □ × +



FLIGHT COEFF - H/H-REF

06/18/84  
BASE TIME - 07745684.000 SEC.

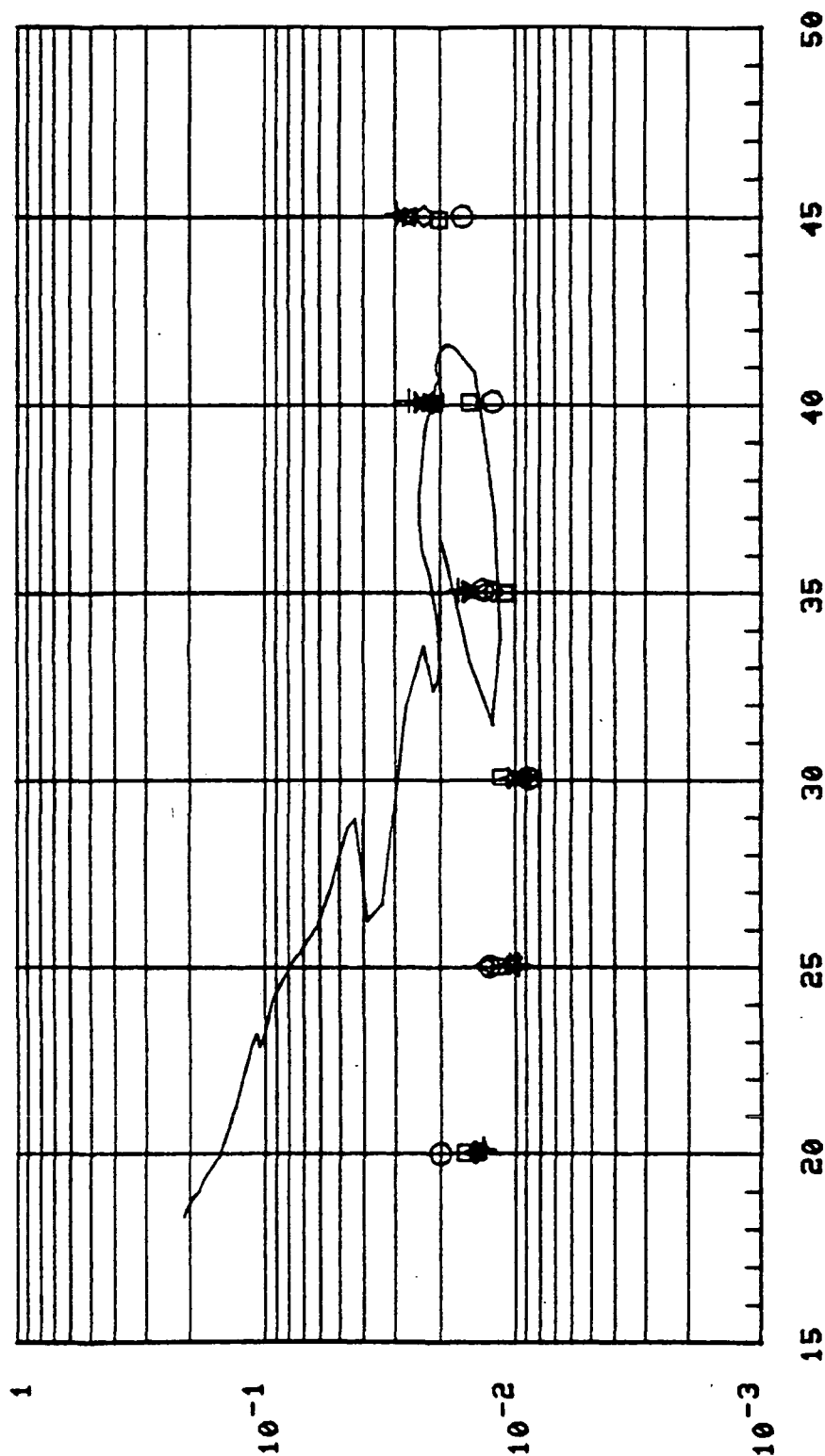
ANGLE-OF-ATTACK - DEG

# STS-4 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

U07T9E08N/H-REF 965-1300 SEC

OH39 0.0175 SCALE RE - 0.5 E06  
 OH39 0.0175 SCALE RE - 1.0 E06  
 OH39 0.0175 SCALE RE - 1.5 E06  
 OH39 0.0175 SCALE RE - 2.0 E06  
 OH39 0.0175 SCALE RE - 2.5 E06  
 OH39 0.0175 SCALE RE - 3.0 E06  
 OH39 0.0175 SCALE RE - 3.7 E06

○ □ ◇ △ ★  
 +



FLIGHT COEFF - H/H-REF

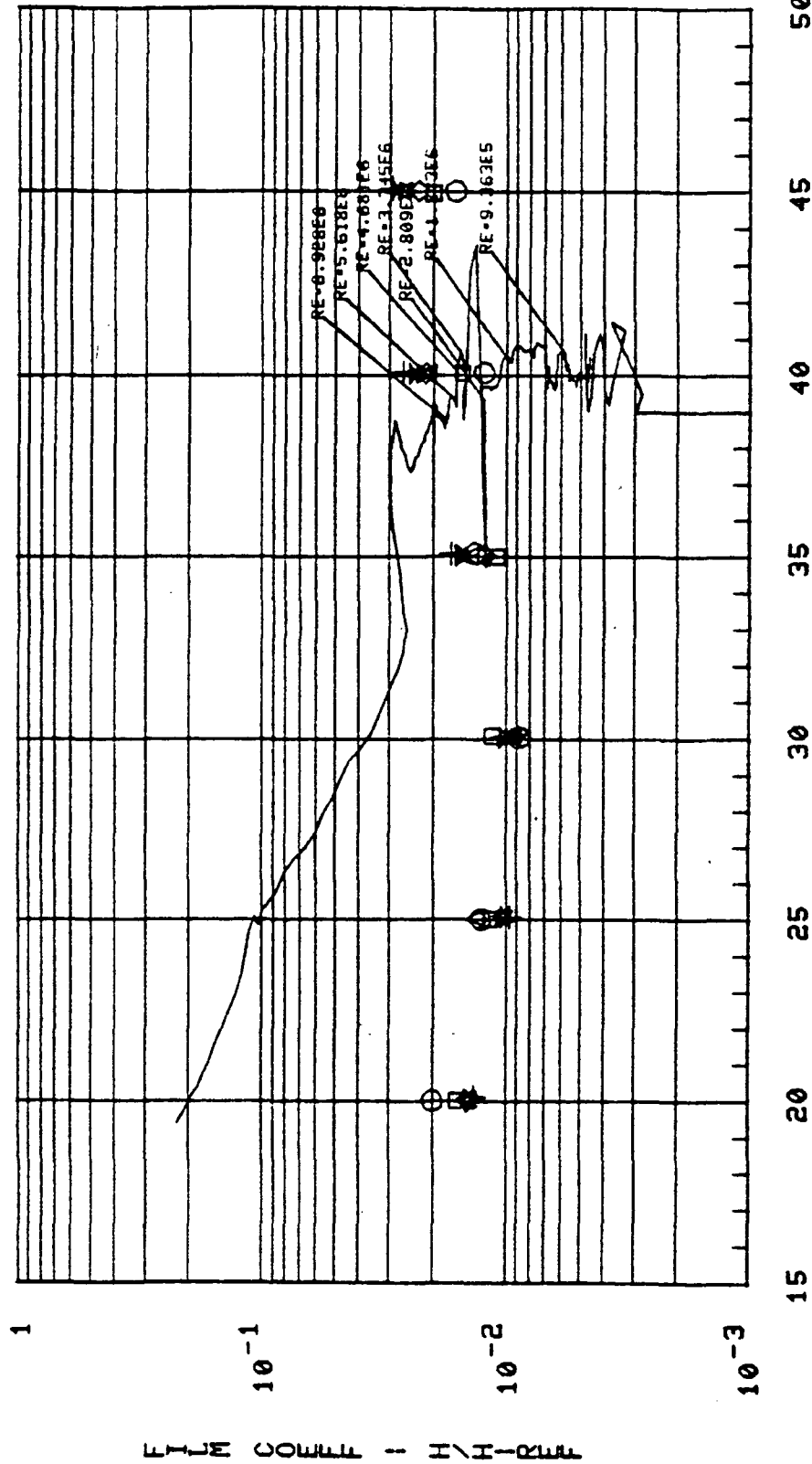
05/18/84  
 BASE TIME - 16040423.000 SEC.

# STS-5 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

U07T28084/H-REF 150-1350 SEC

OH39 0.0175 SCALE RE = 0.5 E06  
 OH39 0.0175 SCALE RE = 1.0 E06  
 OH39 0.0175 SCALE RE = 1.5 E06  
 OH39 0.0175 SCALE RE = 2.0 E06  
 OH39 0.0175 SCALE RE = 2.5 E06  
 OH39 0.0175 SCALE RE = 3.0 E06  
 OH39 0.0175 SCALE RE = 3.7 E06

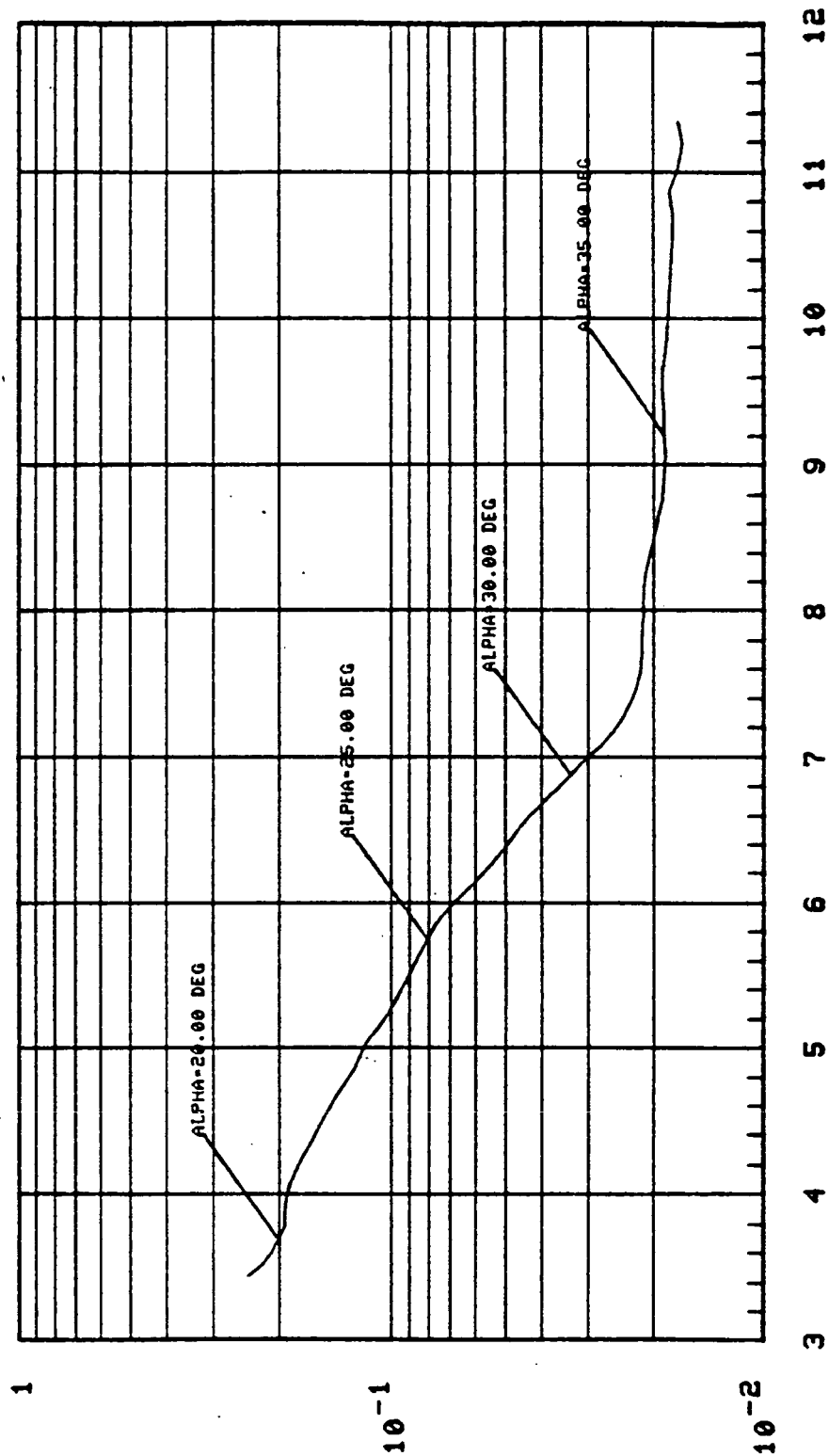
○ □ ◇ × ★ +



06/19/84  
 BASE TIME - 27698591.000 SEC.

# STS-1 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

U07T9808A/H-REF 1065-1460 SEC



06/18/84  
BASE TIME - 09049744.000 SEC.

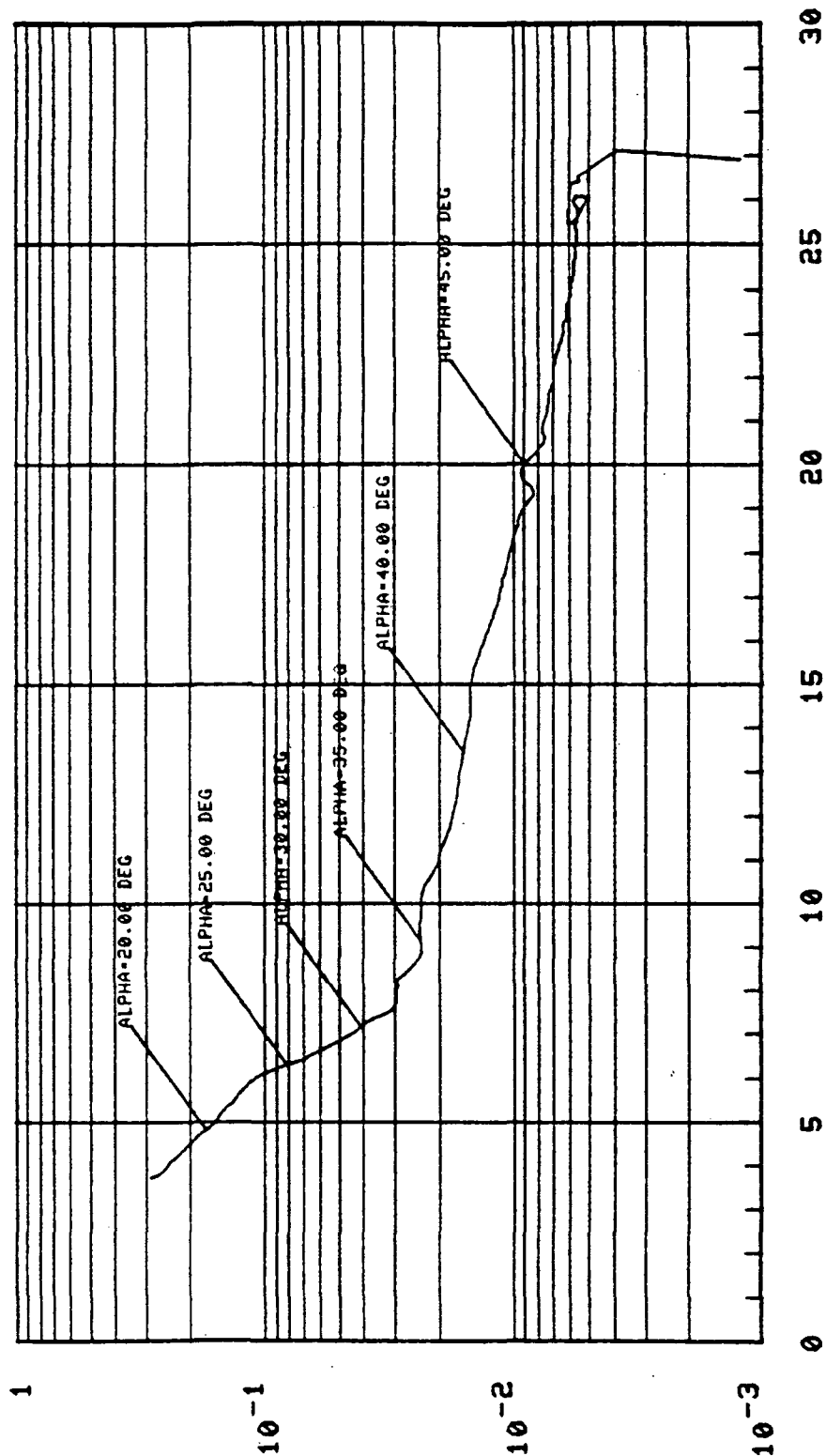
MACH NUMBER

REF COEFF - H/H-REF



# STS-2 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

U07T98084/H-REF 200-1480 SEC



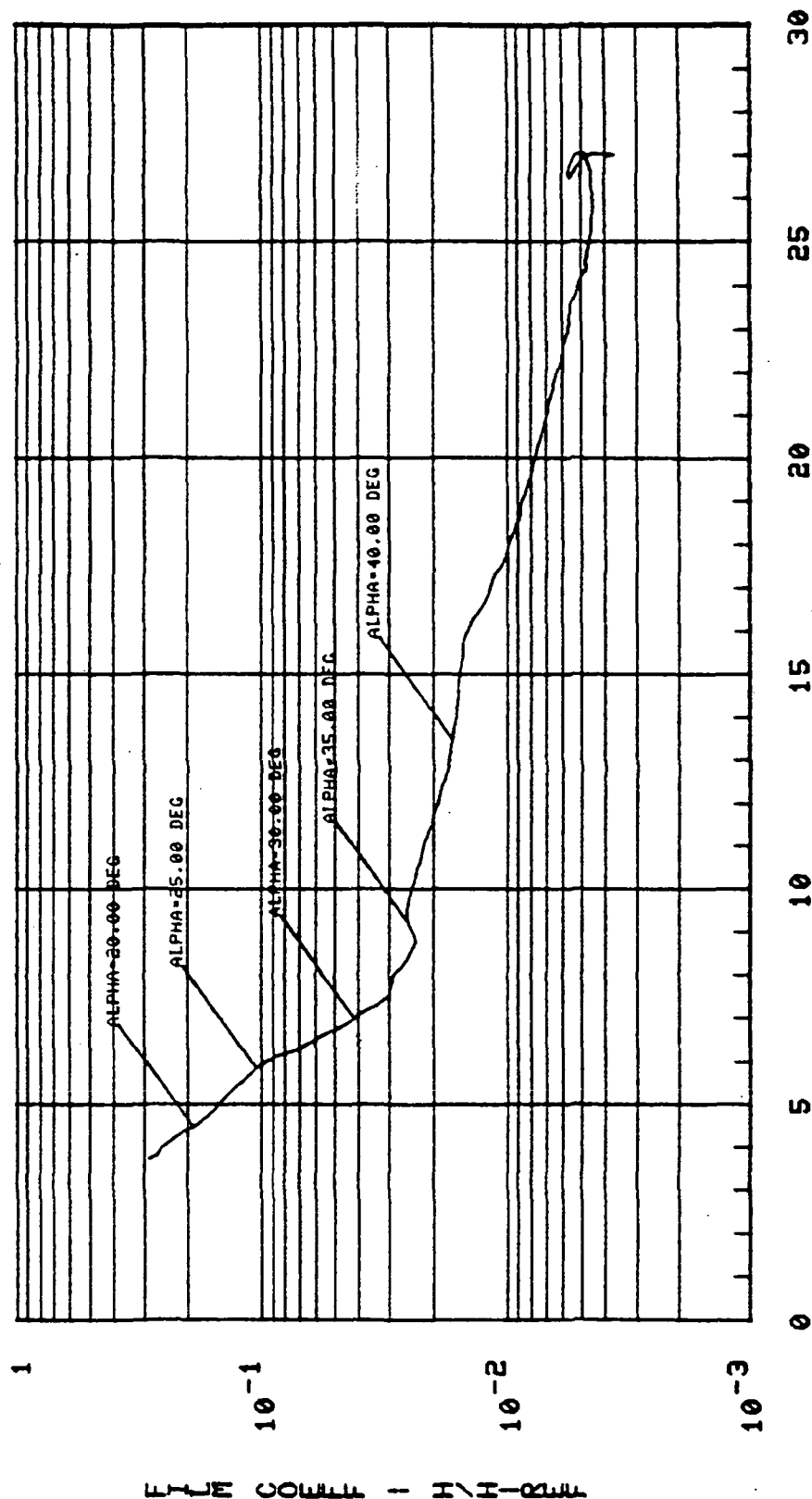
06/18/84  
BASE TIME - 27550236.000 SEC.

MACH NUMBER

FLIGHT PARAMETER COMPARIS

# STS-3 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

U07T9802A/H-REF 200-1380 SEC

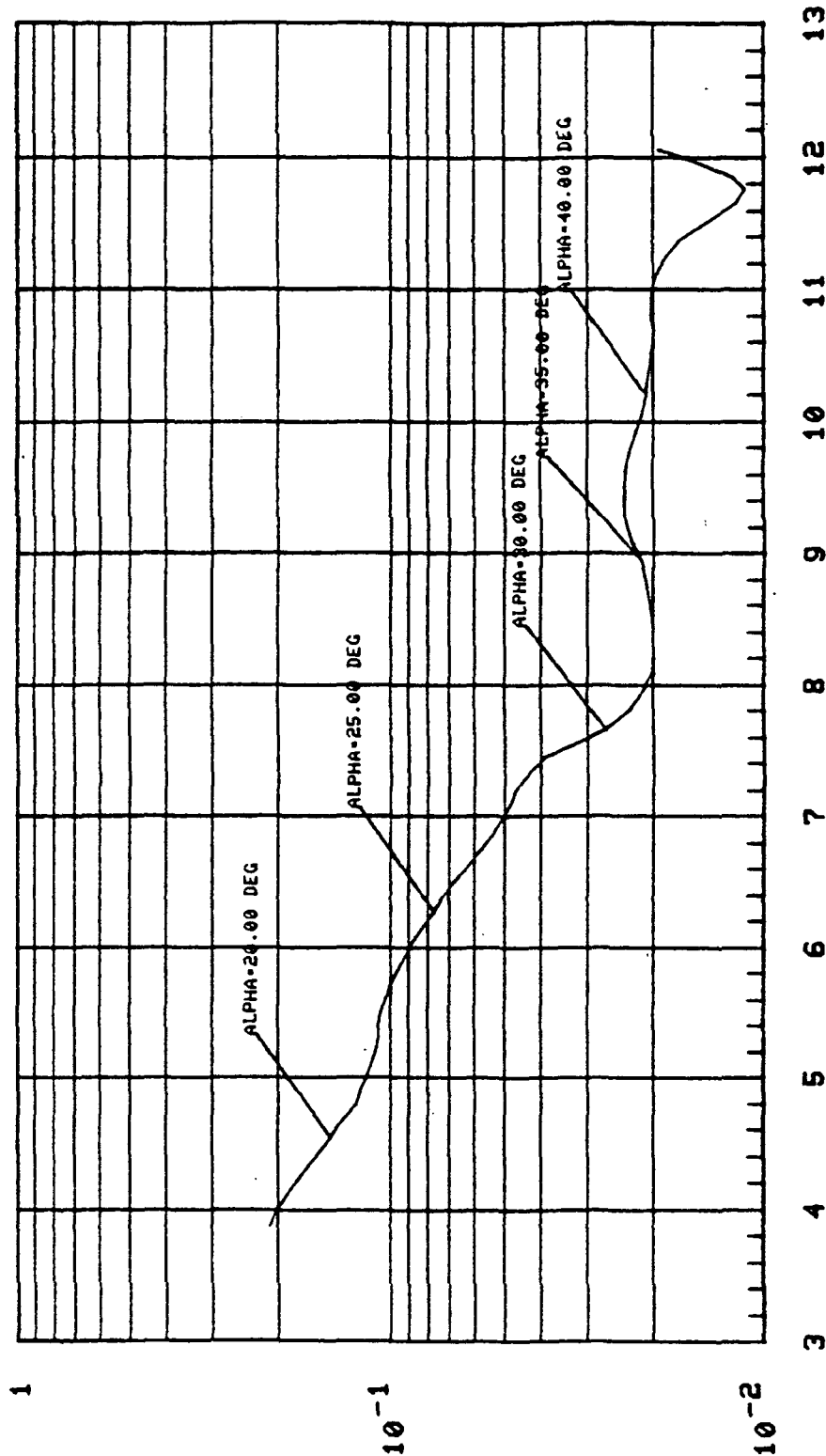


06/18/84  
BASE TIME - 07745684.000 SEC.

MACH NUMBER

# STS-4 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

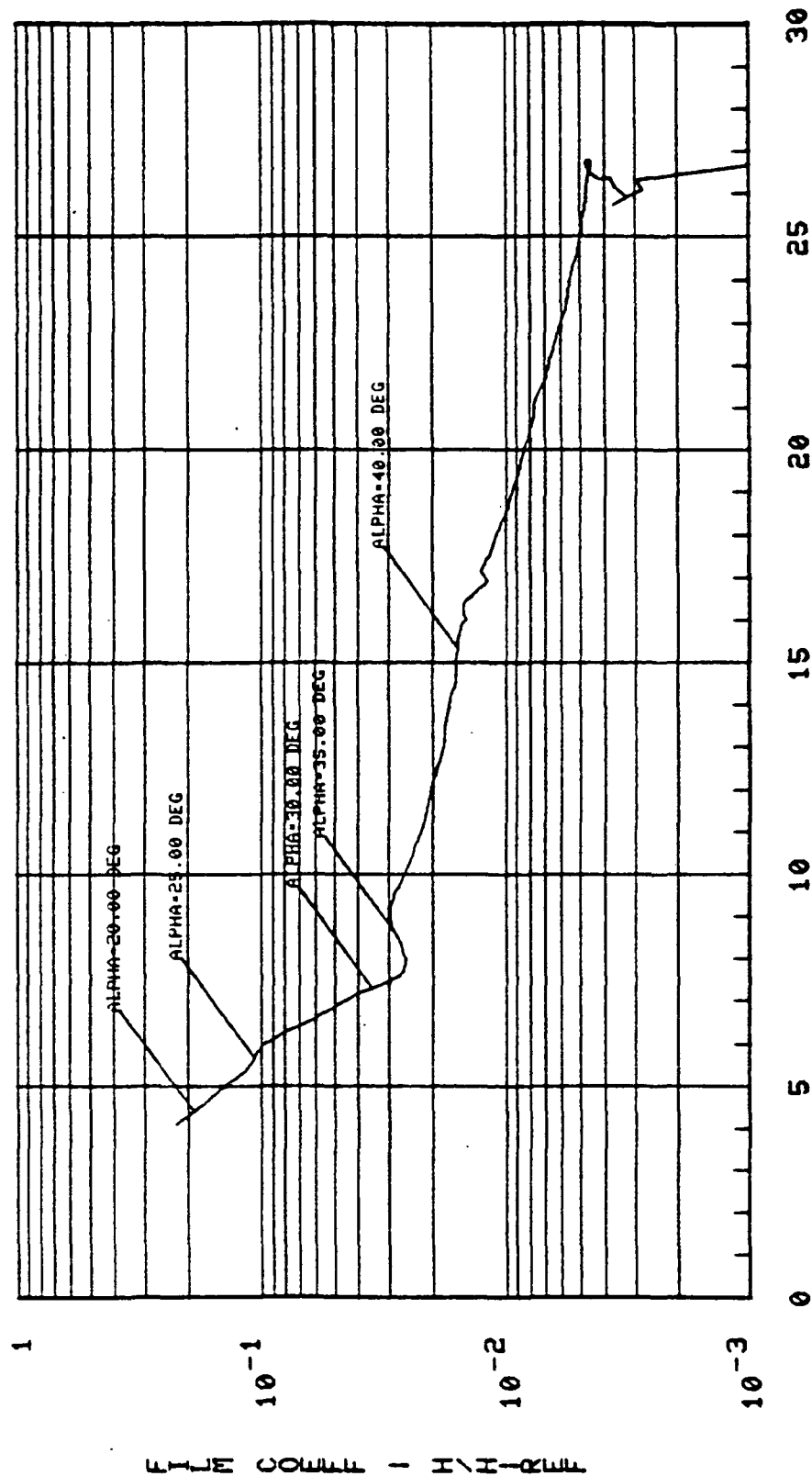
UOT983BA/H-REF 965-1300 SEC



FLIGHT COMPARIS - H/H-REF

# STS-5 (107 FT LENGTH CL $X/L=0.098$ ) FLIGHT PARAMETER COMPARIS

U07T92026/H-REF 150-1350 SEC



06/19/84  
BASE TIME - 27698591.000 SEC.

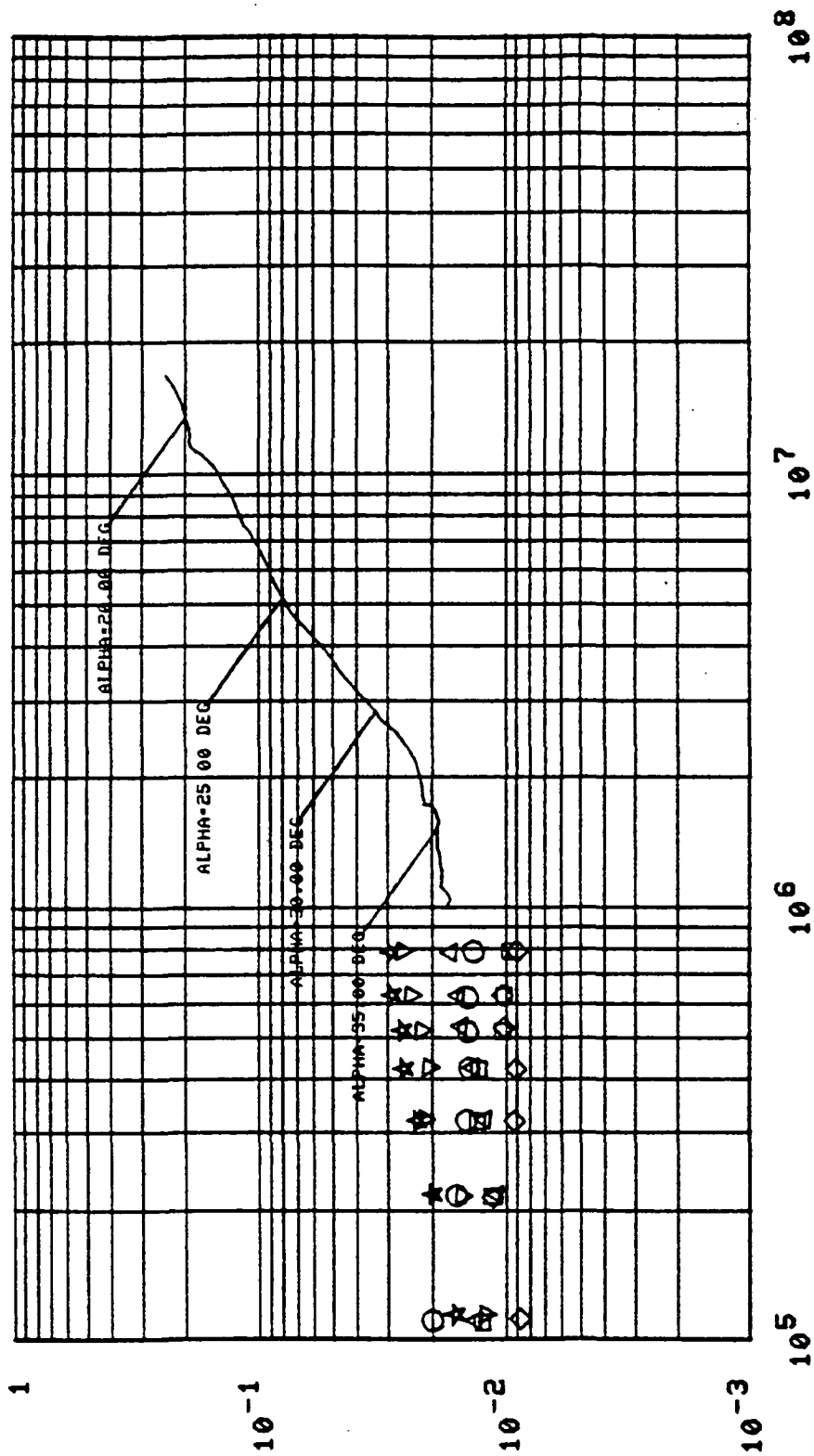
MACH NUMBER

# STS-1 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

00779808A/H-REF 1065-1460 SEC

- 0H39 ALPHA - 20 DEGREES
- 0H39 ALPHA - 25 DEGREES
- 0H39 ALPHA - 30 DEGREES
- 0H39 ALPHA - 35 DEGREES
- 0H39 ALPHA - 40 DEGREES
- 0H39 ALPHA - 45 DEGREES

○ □ △ ×



REYNOLDS NUMBER (NS)

06/18/84

BASE TIME - 09049744.000 SEC.

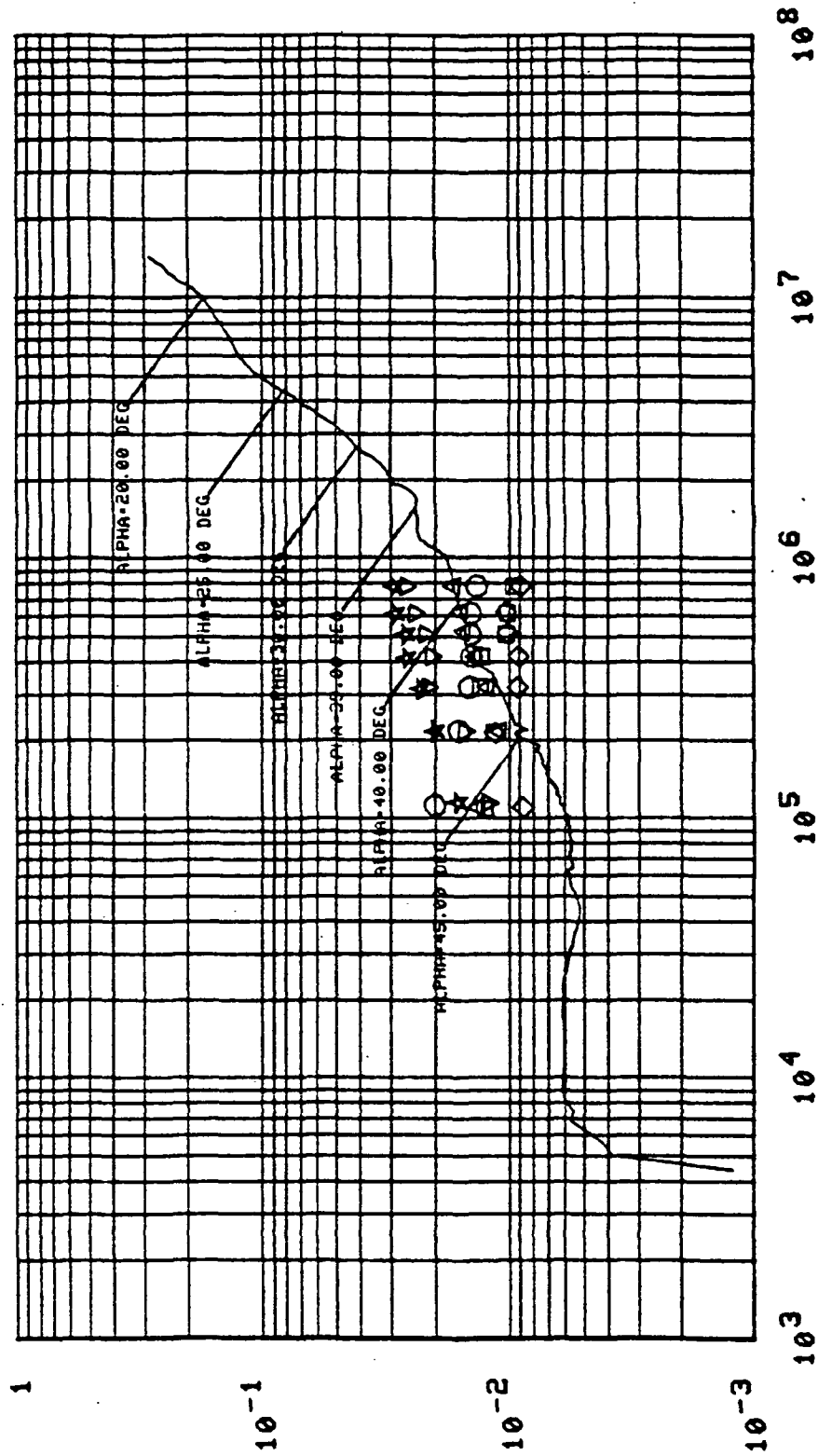
FLIGHT COMPARE - H/H-REF

# STS-2 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

- QH39 ALPHA - 20 DEGREES
- QH39 ALPHA - 25 DEGREES
- QH39 ALPHA - 30 DEGREES
- QH39 ALPHA - 35 DEGREES
- QH39 ALPHA - 40 DEGREES
- QH39 ALPHA - 45 DEGREES

107T32034/H-REF 200-1480 SEC

○ □ × △



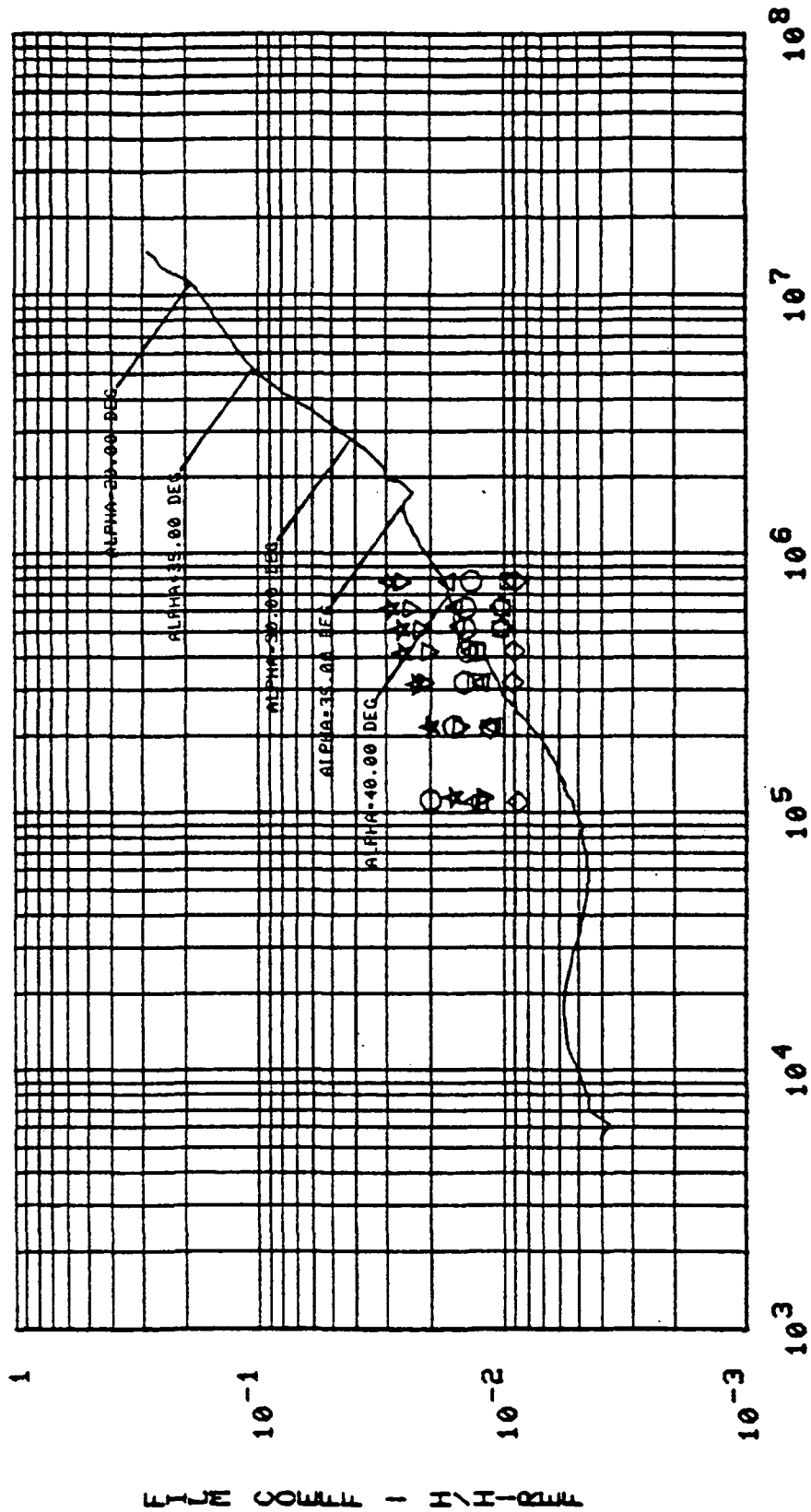
CL - H-REF

# STS-3 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

OH39 ALPHA - 20 DEGREES  
 OH39 ALPHA - 25 DEGREES  
 OH39 ALPHA - 30 DEGREES  
 OH39 ALPHA - 35 DEGREES  
 OH39 ALPHA - 40 DEGREES  
 OH39 ALPHA - 45 DEGREES

U07T9802A/H-REF 200-1380 SEC

○ □ ◇ △ ★



CL - H/H-REF

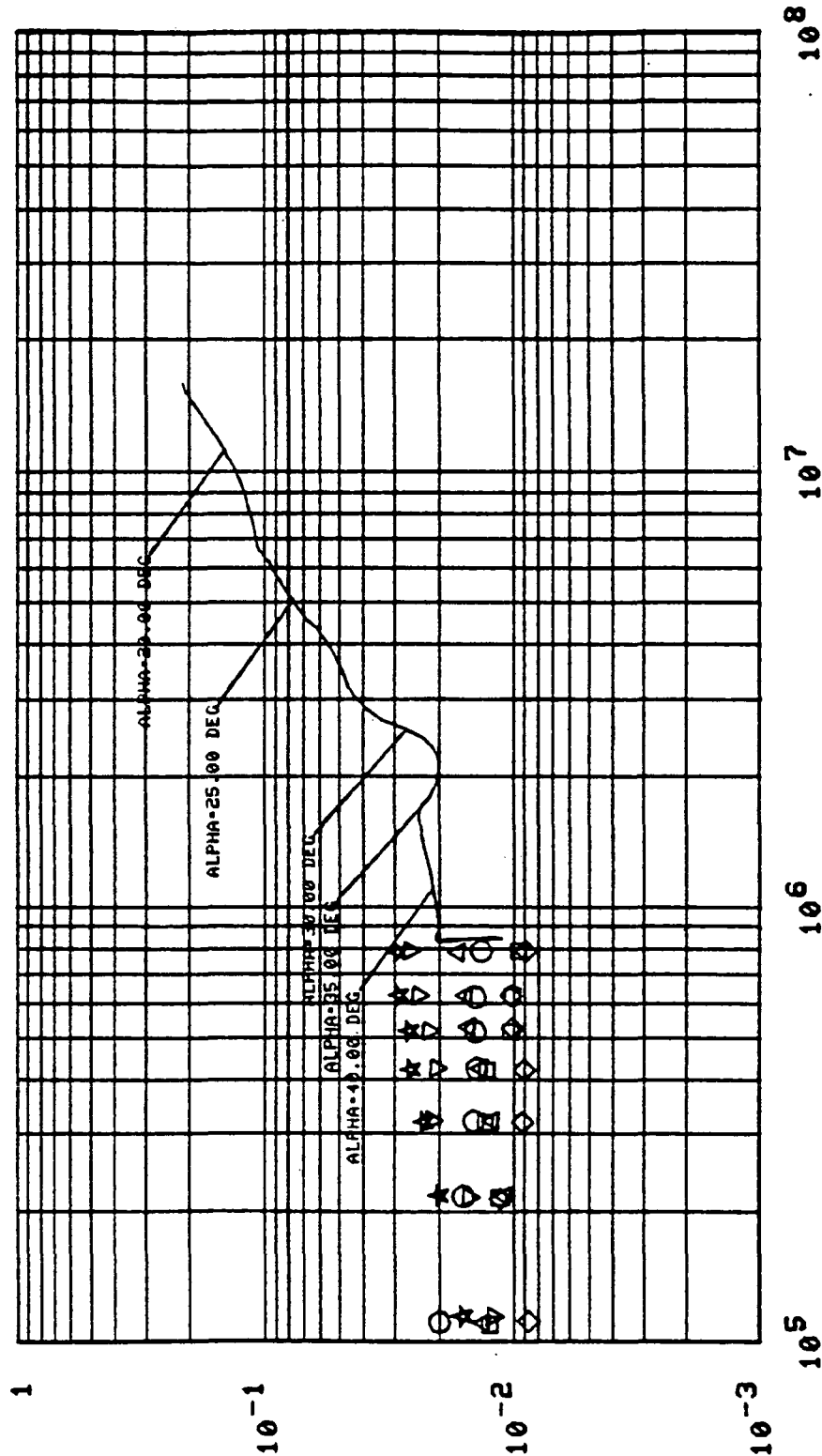
REYNOLDS NUMBER (NS)  
 06/18/84  
 BASE TIME - 07745684.000 SEC.

# STS-4 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

U07T9808A/H-REF 965-1300 SEC

QH39 ALPHA = 20 DEGREES  
 QH39 ALPHA = 25 DEGREES  
 QH35 ALPHA = 30 DEGREES  
 QH39 ALPHA = 35 DEGREES  
 QH33 ALPHA = 40 DEGREES  
 QH39 ALPHA = 45 DEGREES

○ □ ◇ △ ★



06/18/84  
 BASE TIME - 16040423.000 SEC.

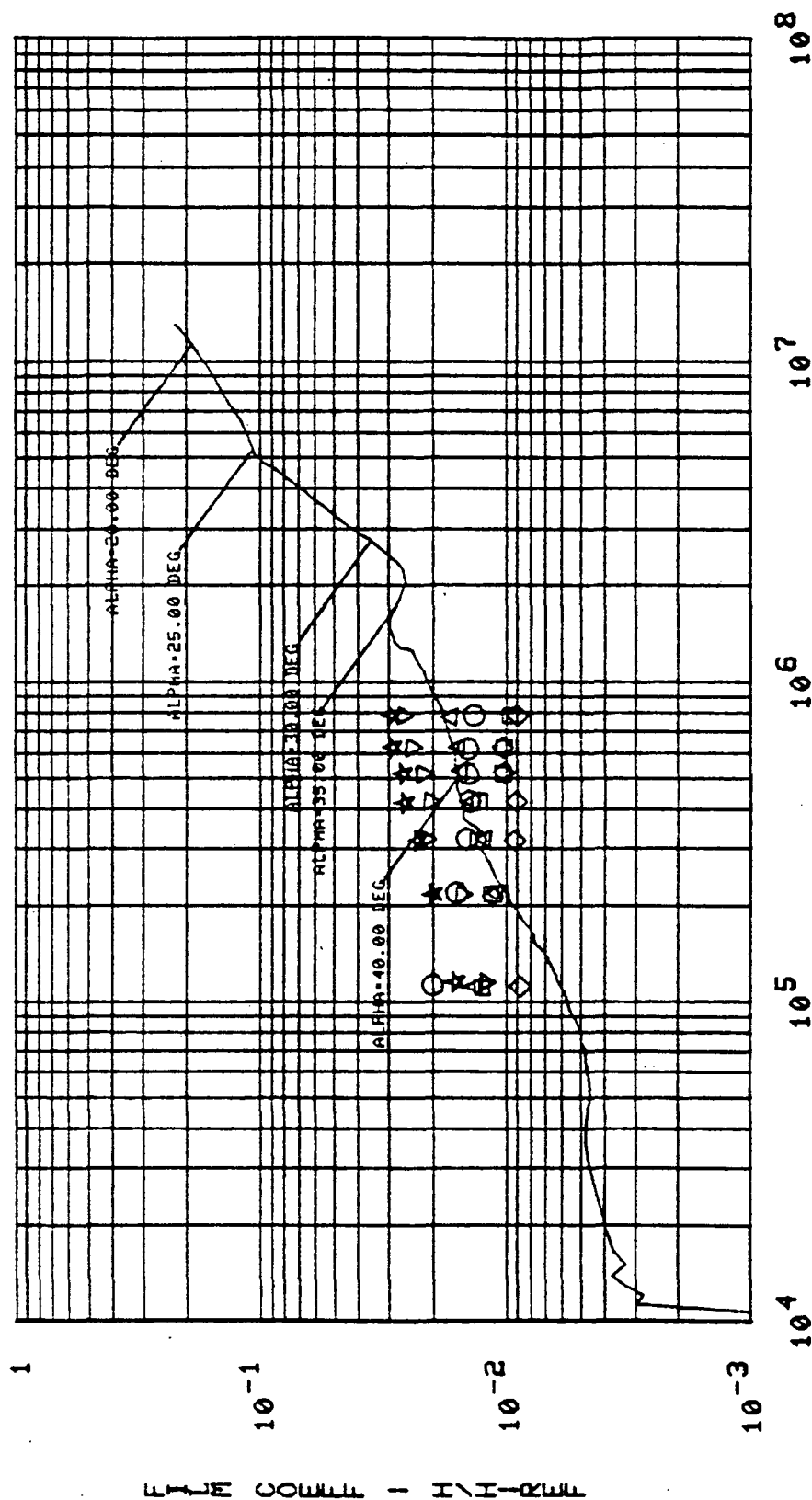
REYNOLDS NUMBER (NS)



# STS-5 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

O QH39 ALPHA = 20 DEGREES  
 X QH39 ALPHA = 25 DEGREES  
 O QH39 ALPHA = 30 DEGREES  
 X QH39 ALPHA = 35 DEGREES  
 O QH39 ALPHA = 40 DEGREES  
 X QH39 ALPHA = 45 DEGREES

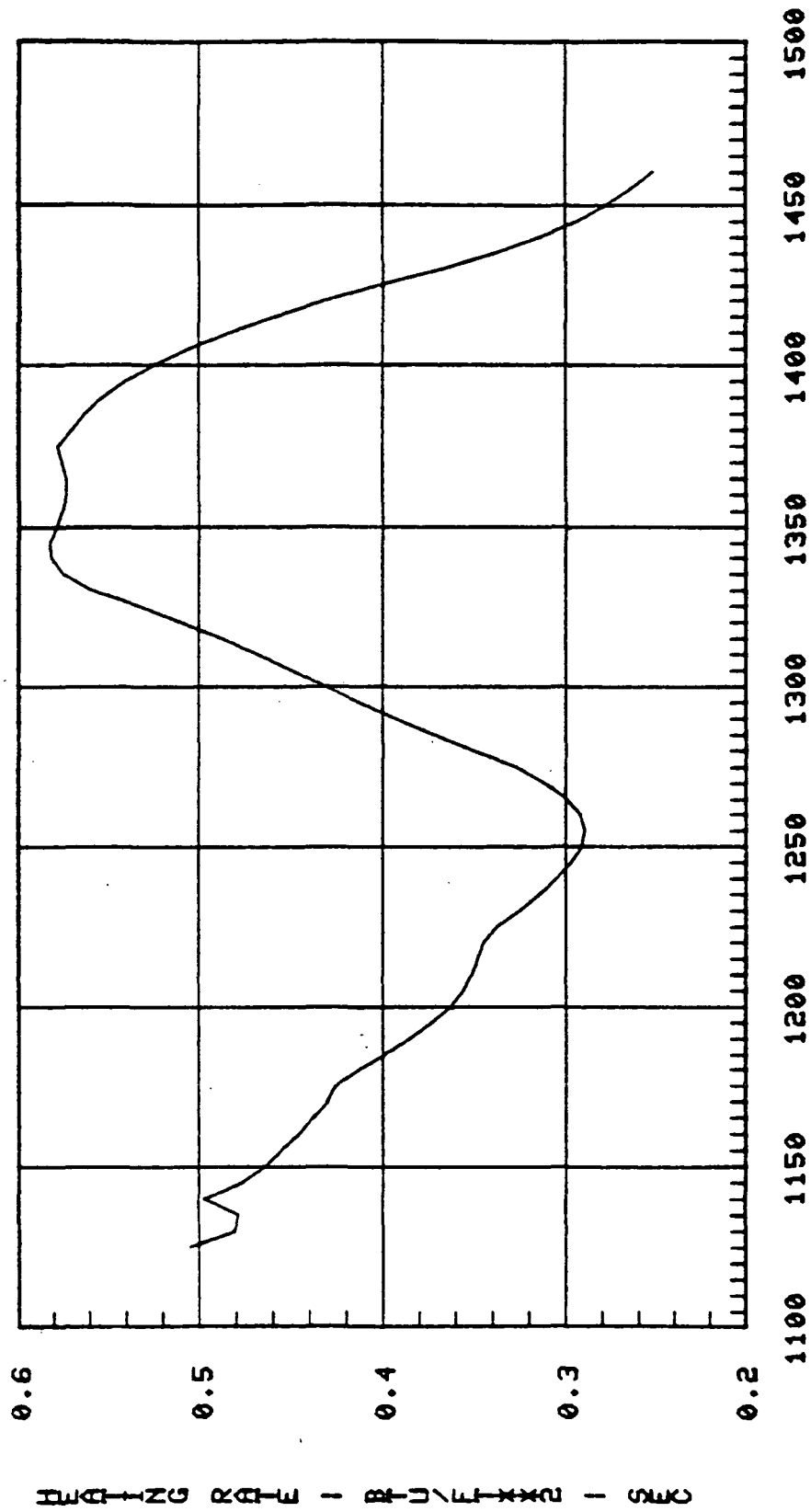
U07T9208H/H-REF 150-1350 SEC



REYNOLDS NUMBER (NS) 06/19/84 BASE TIME - 87698591.000 SEC.

# STS-1 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

U07T98084

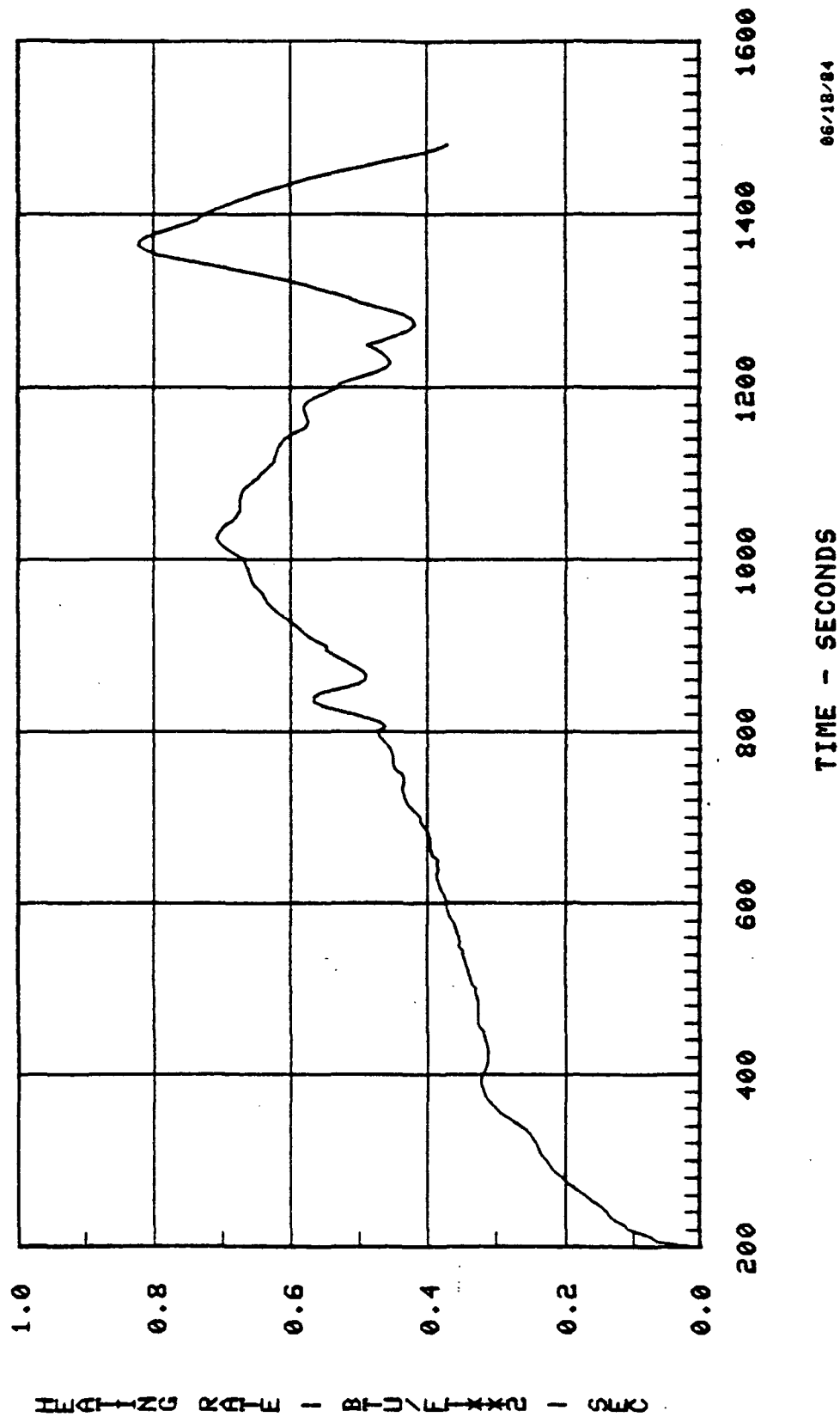


TIME - SECONDS

06/18/84

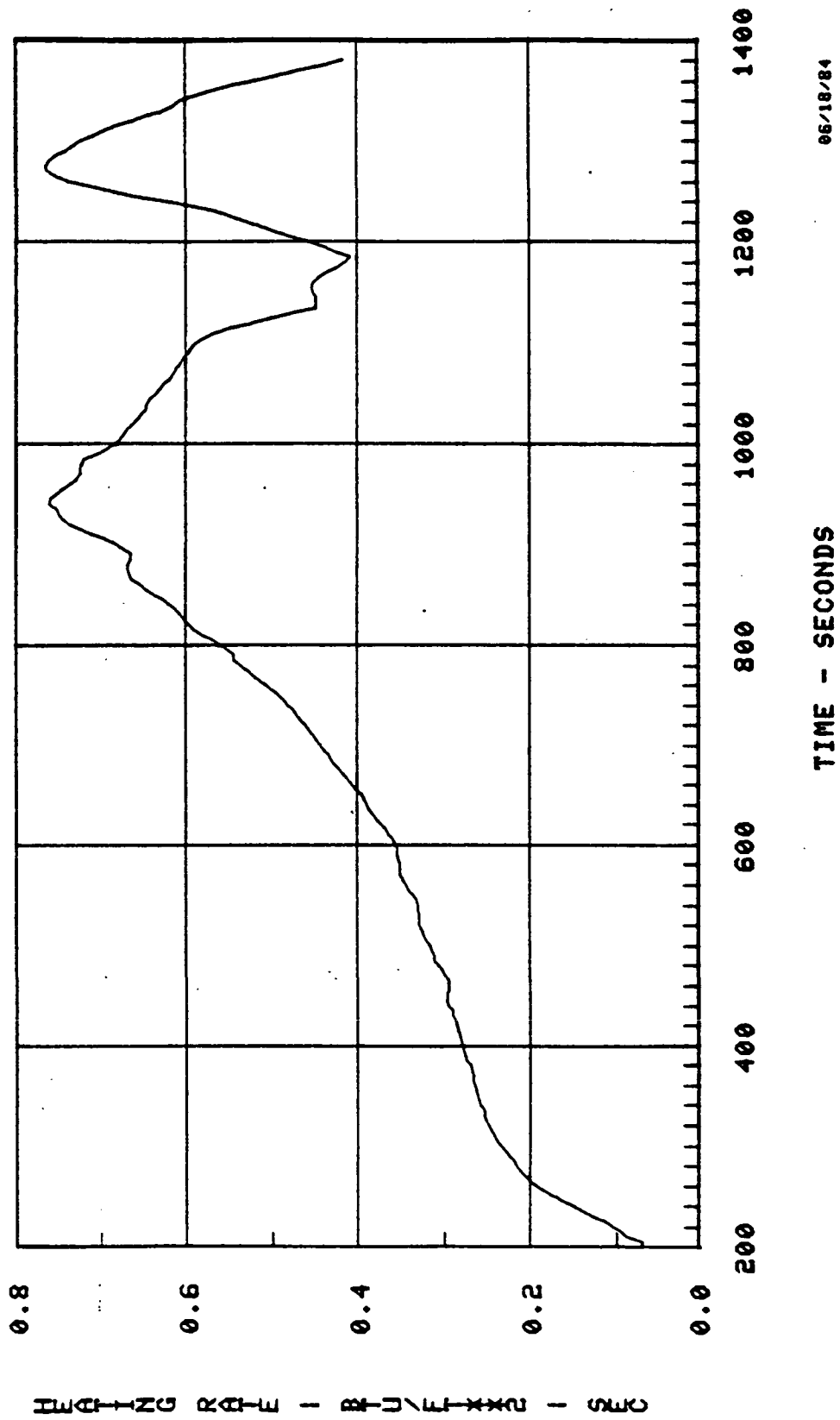
# STS-2 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

U07T9808A



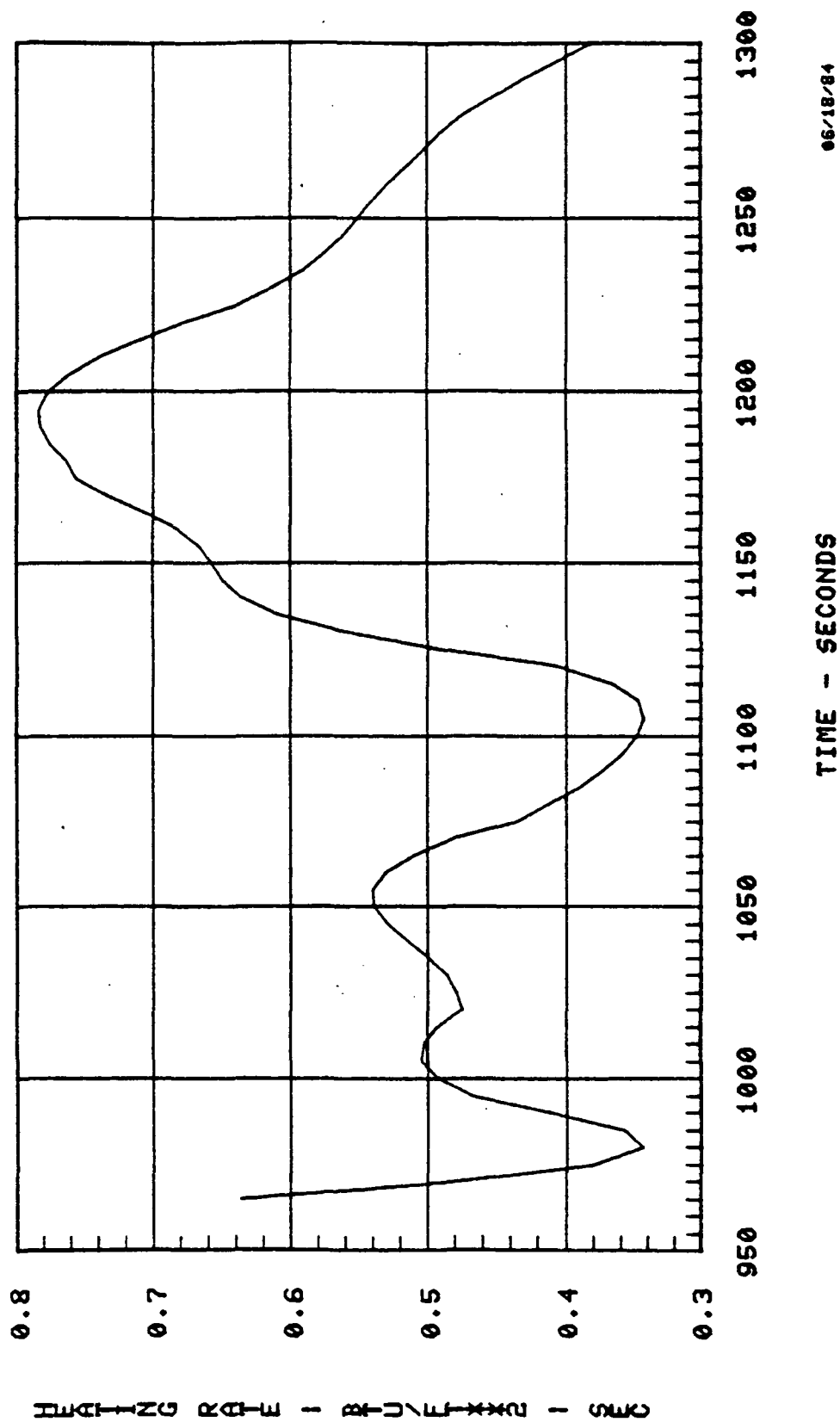
# STS-3 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

U07T3808A



# STS-4 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

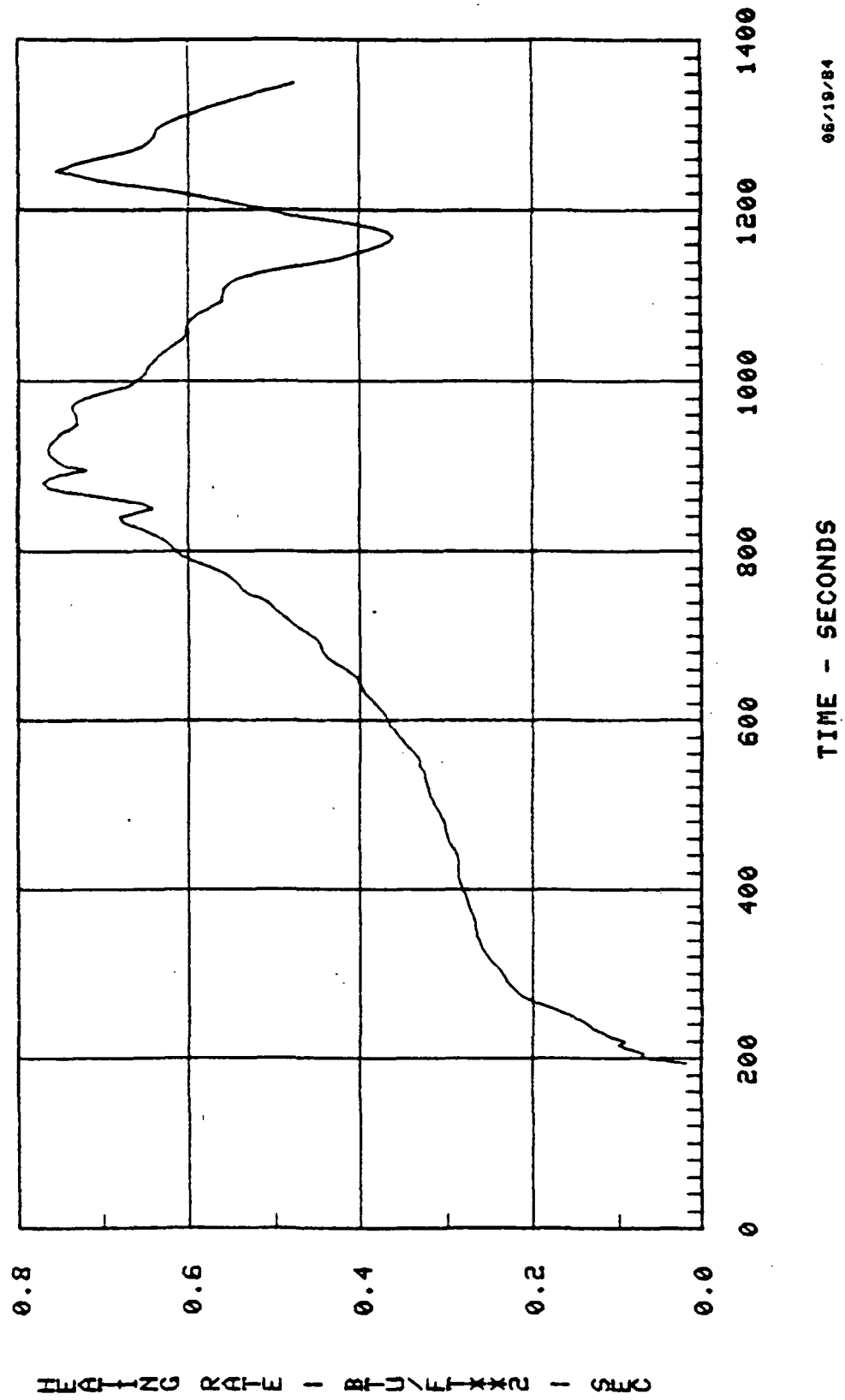
U07T9808A



06/18/84

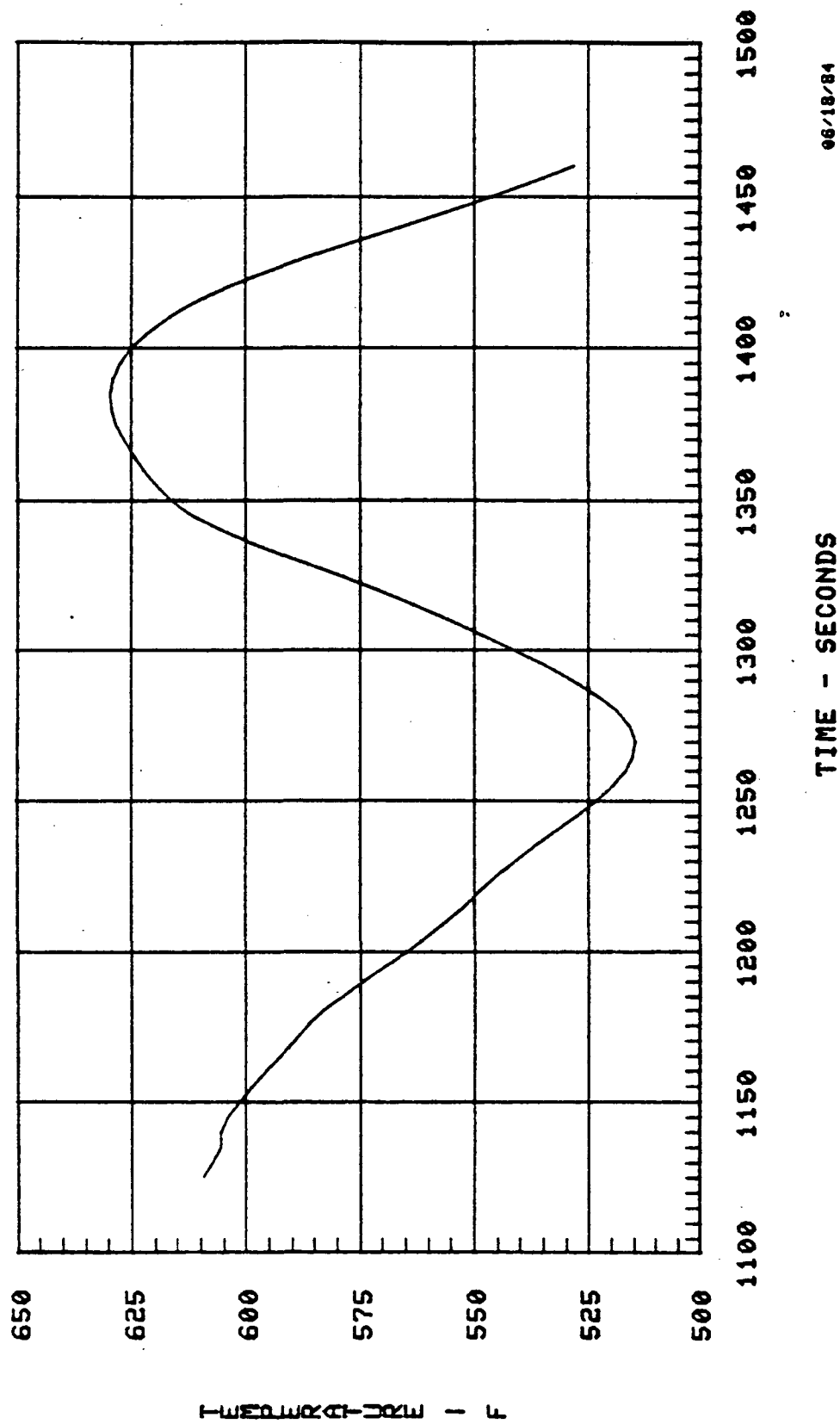
# STS-5 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

U07T9802H



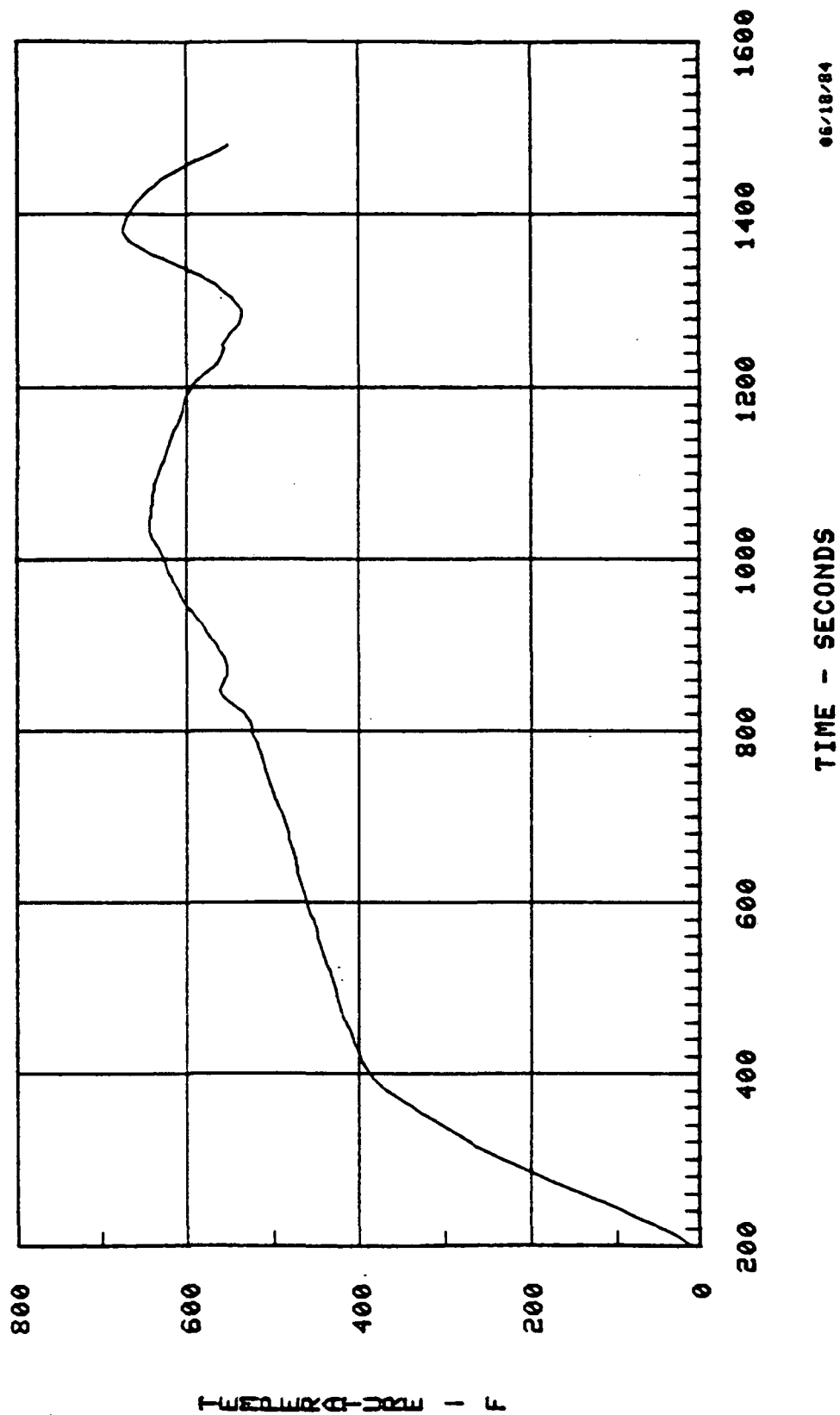
# STS-1 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

U07T9808A



# STS-2 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

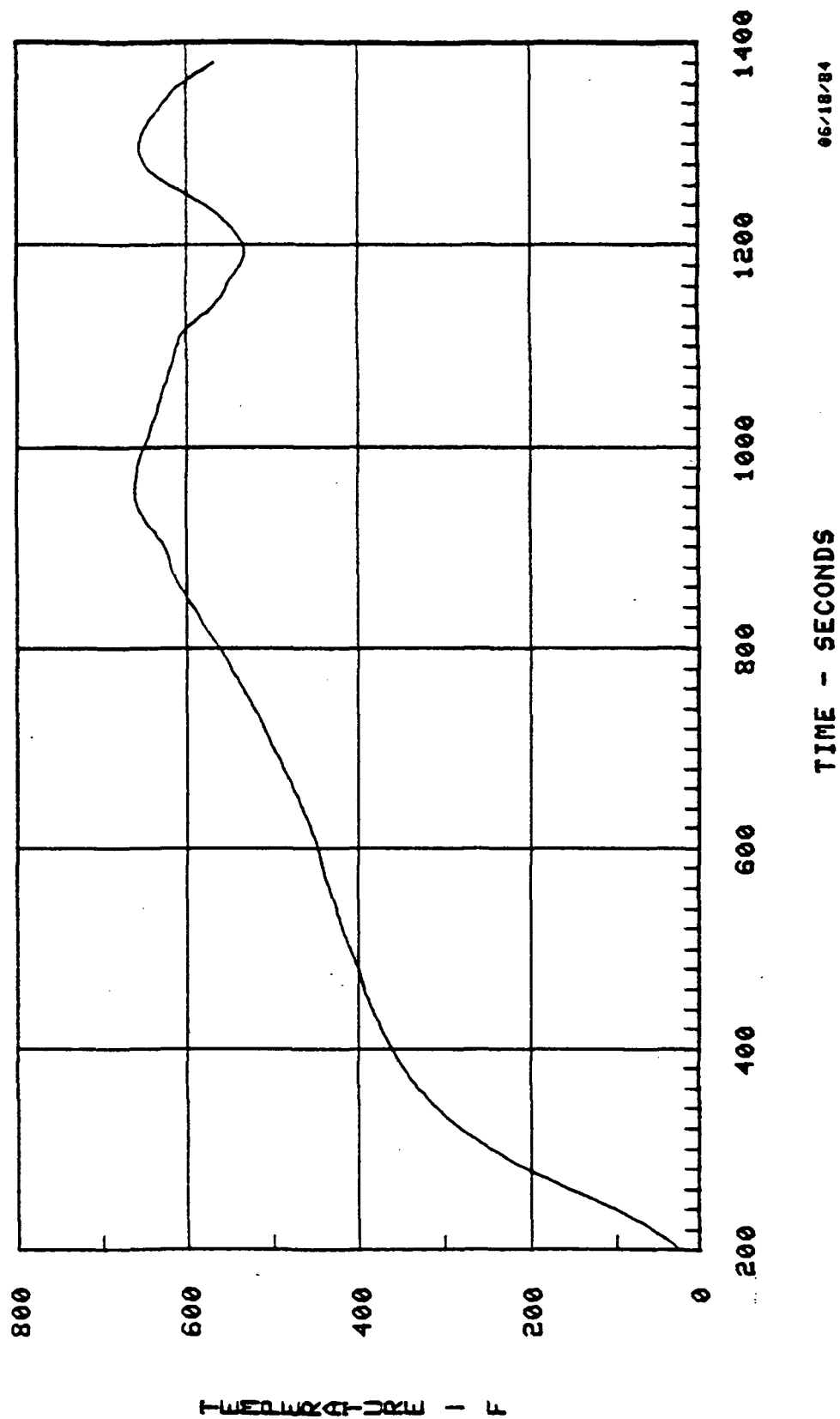
U07T98084





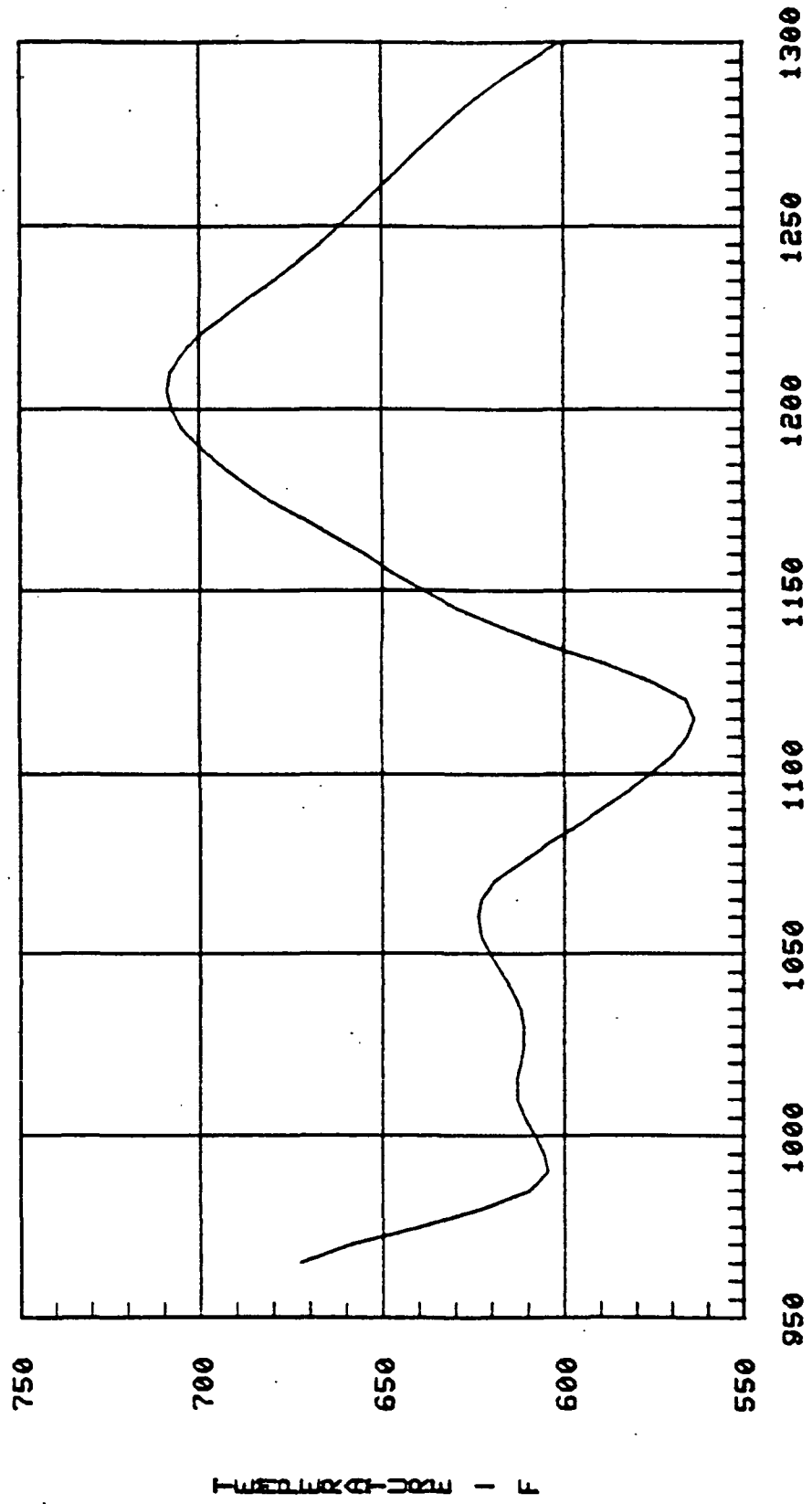
# STS-3 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

U07T9808A



# STS-4 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

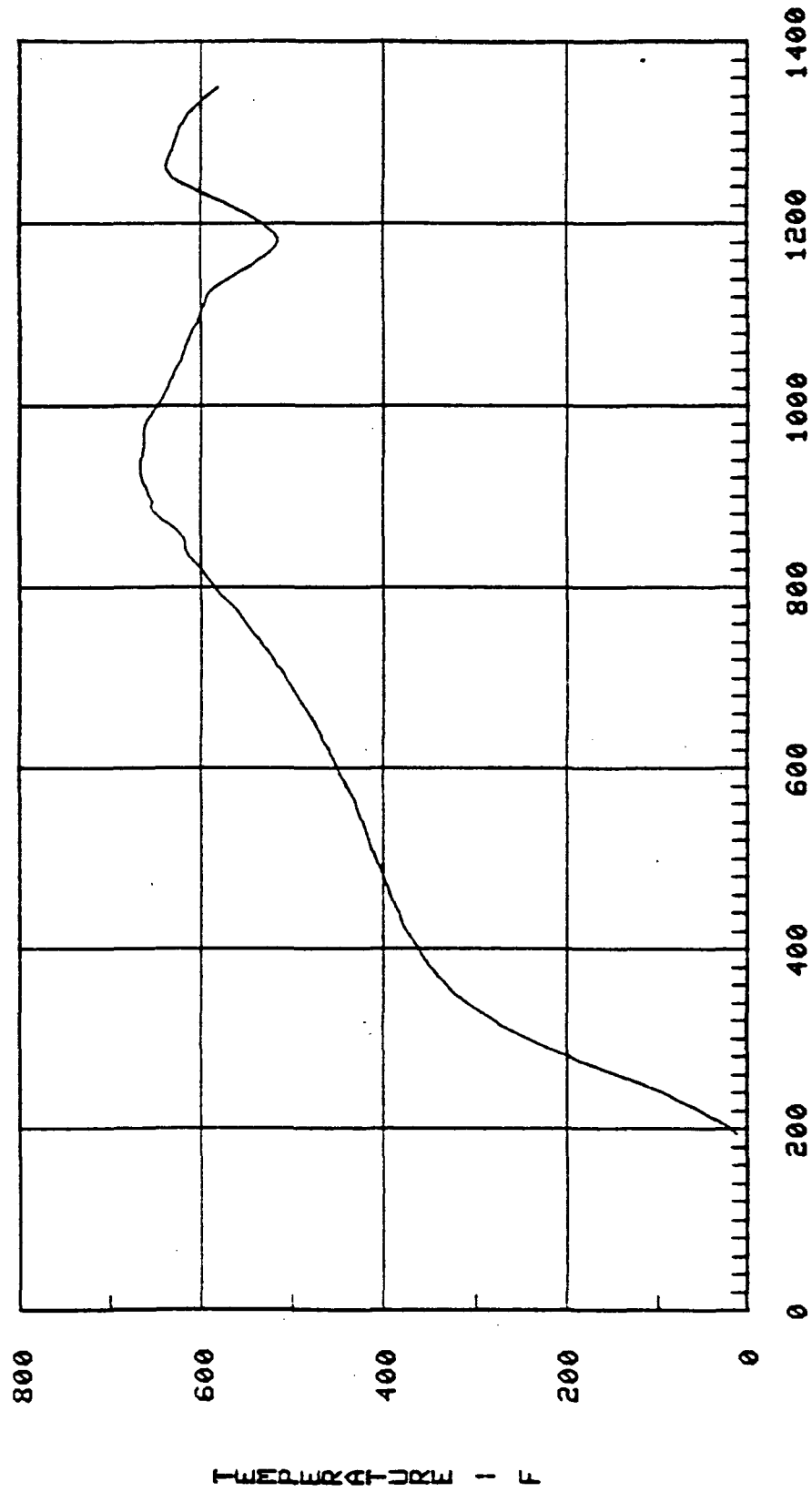
U07T9808A



TIME - SECONDS 06/18/84

# STS-5 (107 FT LENGTH CL X/L=0.098) FLIGHT PARAMETER COMPARIS

U07T98084



TIME - SECONDS

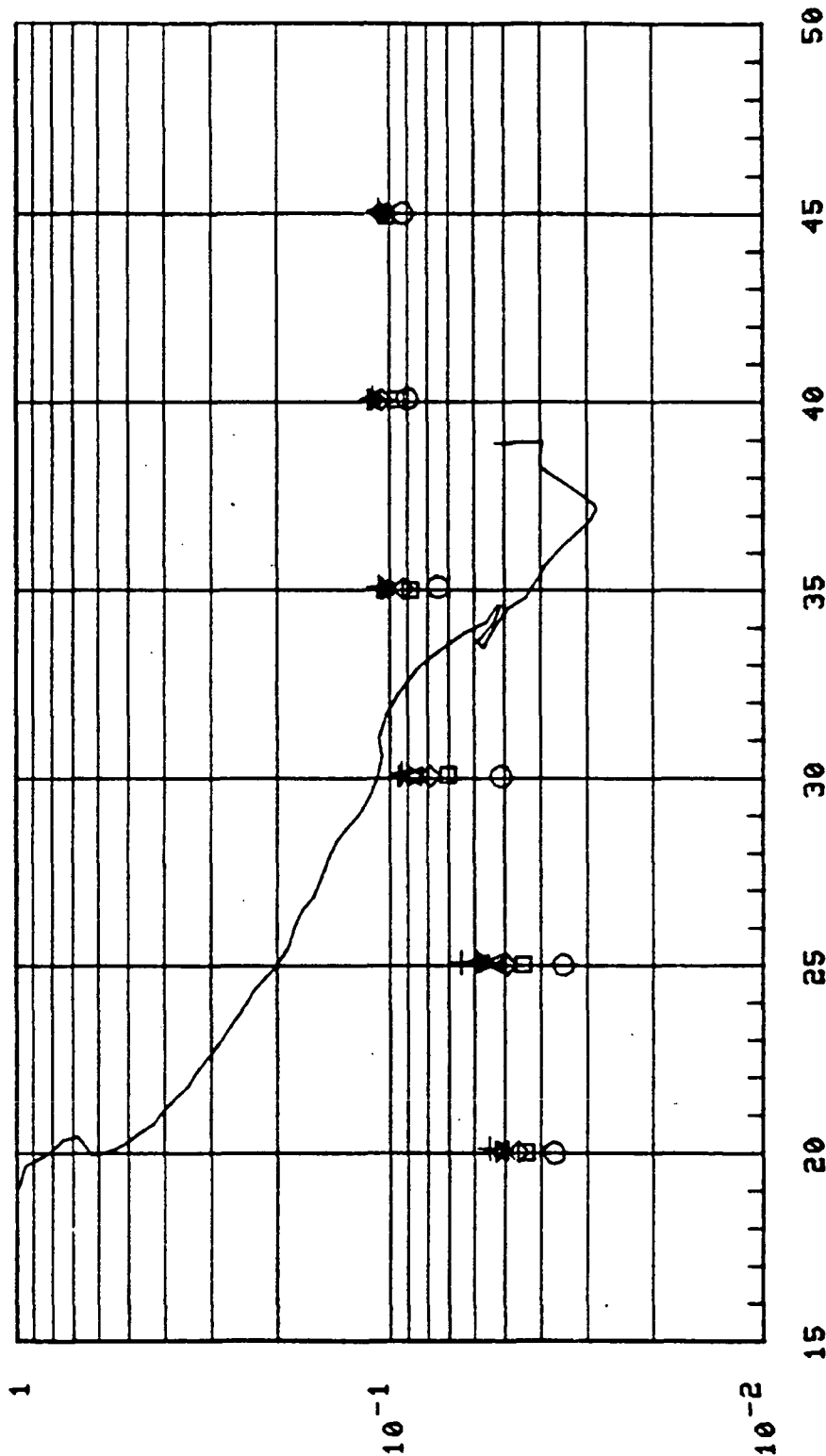
06/19/84

# STS-1 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

U07T5736M-H-REF 1065-1460 SEC

0H39 0.0175 SCALE RE - 0.5 E06  
 0H39 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H39 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

○ □ × △ +  
 ○ □ × △ +



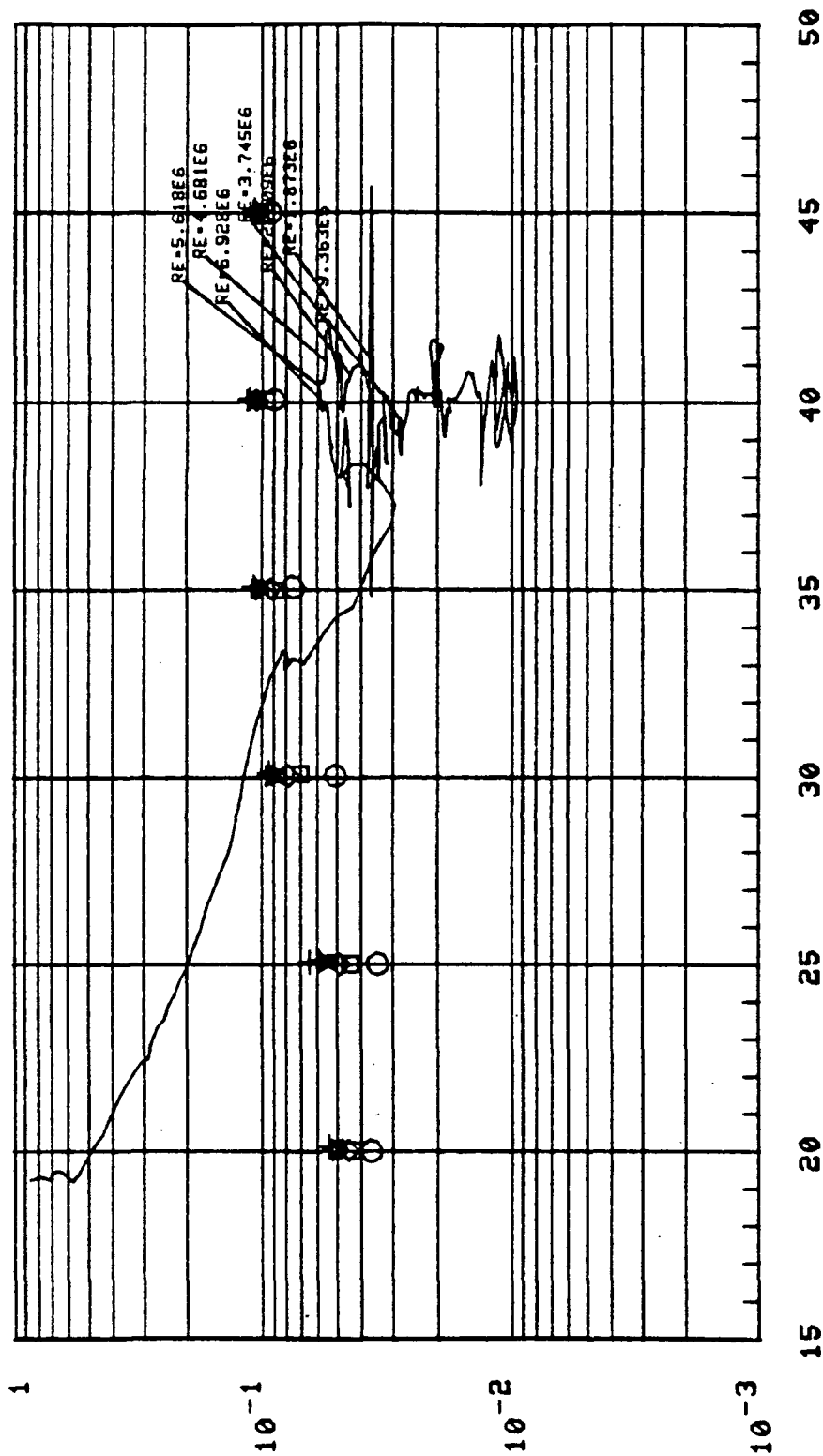
U07T5736M-H-REF

# STS-2 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

U07T9736A/H-FEF 200-1480 SEC

QH39 0.0175 SCALE RE - 0.5 E06  
 QH39 0.0175 SCALE RE - 1.0 E06  
 QH39 0.0175 SCALE RE - 1.5 E06  
 QH39 0.0175 SCALE RE - 2.0 E06  
 QH39 0.0175 SCALE RE - 2.5 E06  
 QH39 0.0175 SCALE RE - 3.0 E06  
 QH39 0.0175 SCALE RE - 3.7 E06

□  
 ○  
 ×  
 △  
 +



FILM COEFF - H/H-REF

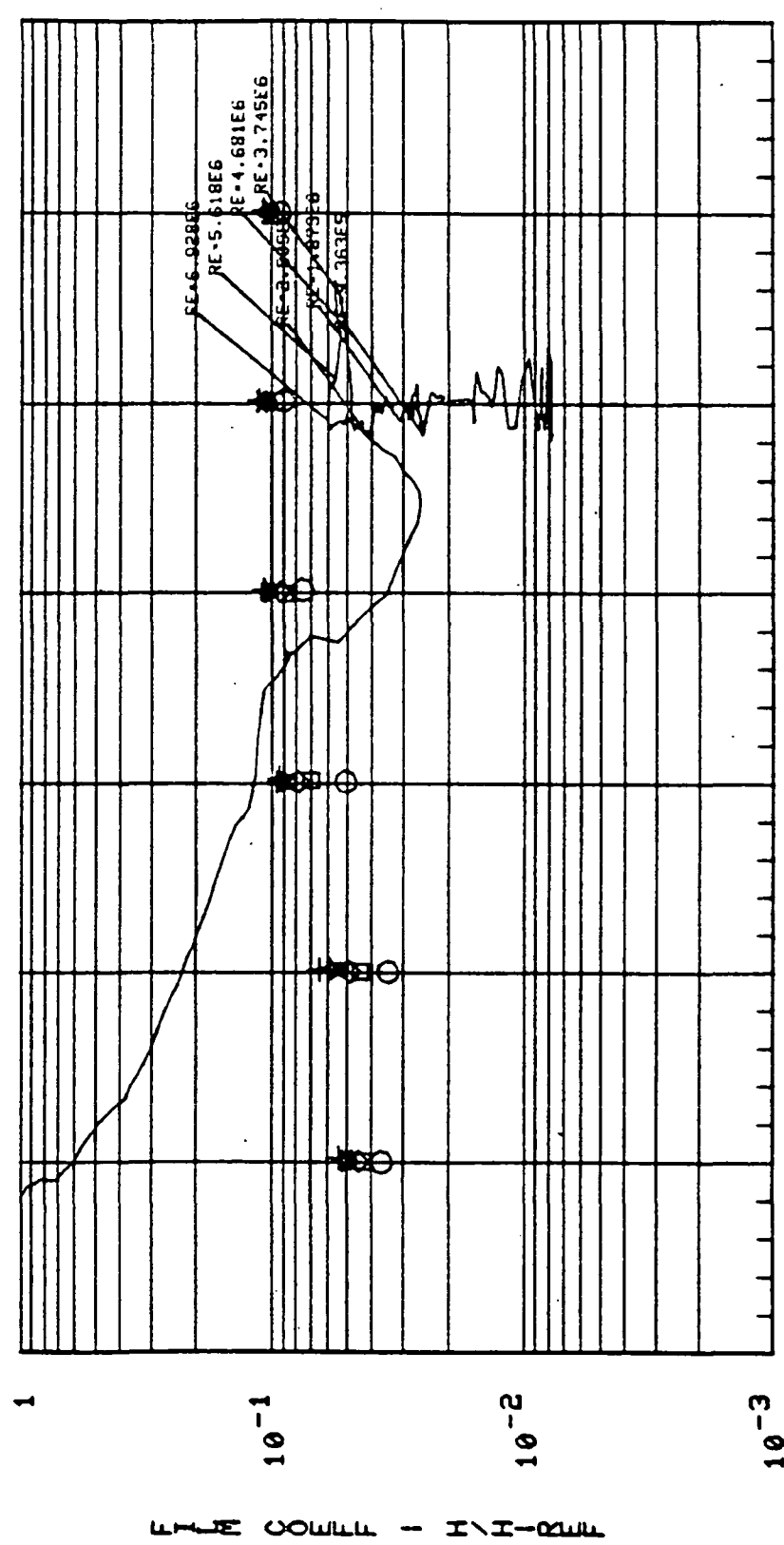
ANGLE-OF-ATTACK - DEG  
 06/18/84  
 BASE TIME - 27550236.000 SEC.

# STS-3 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

007T97364/H-REF 200-1380 SEC

OH39 0.0175 SCALE RE • 0.5 E06  
 OH39 0.0175 SCALE RE • 1.0 E06  
 OH39 0.0175 SCALE RE • 1.5 E06  
 OH39 0.0175 SCALE RE • 2.0 E06  
 OH39 0.0175 SCALE RE • 2.5 E06  
 OH39 0.0175 SCALE RE • 3.0 E06  
 OH39 0.0175 SCALE RE • 3.7 E06

○ □ × △ ★ +



15 20 25 30 35 40 45 50

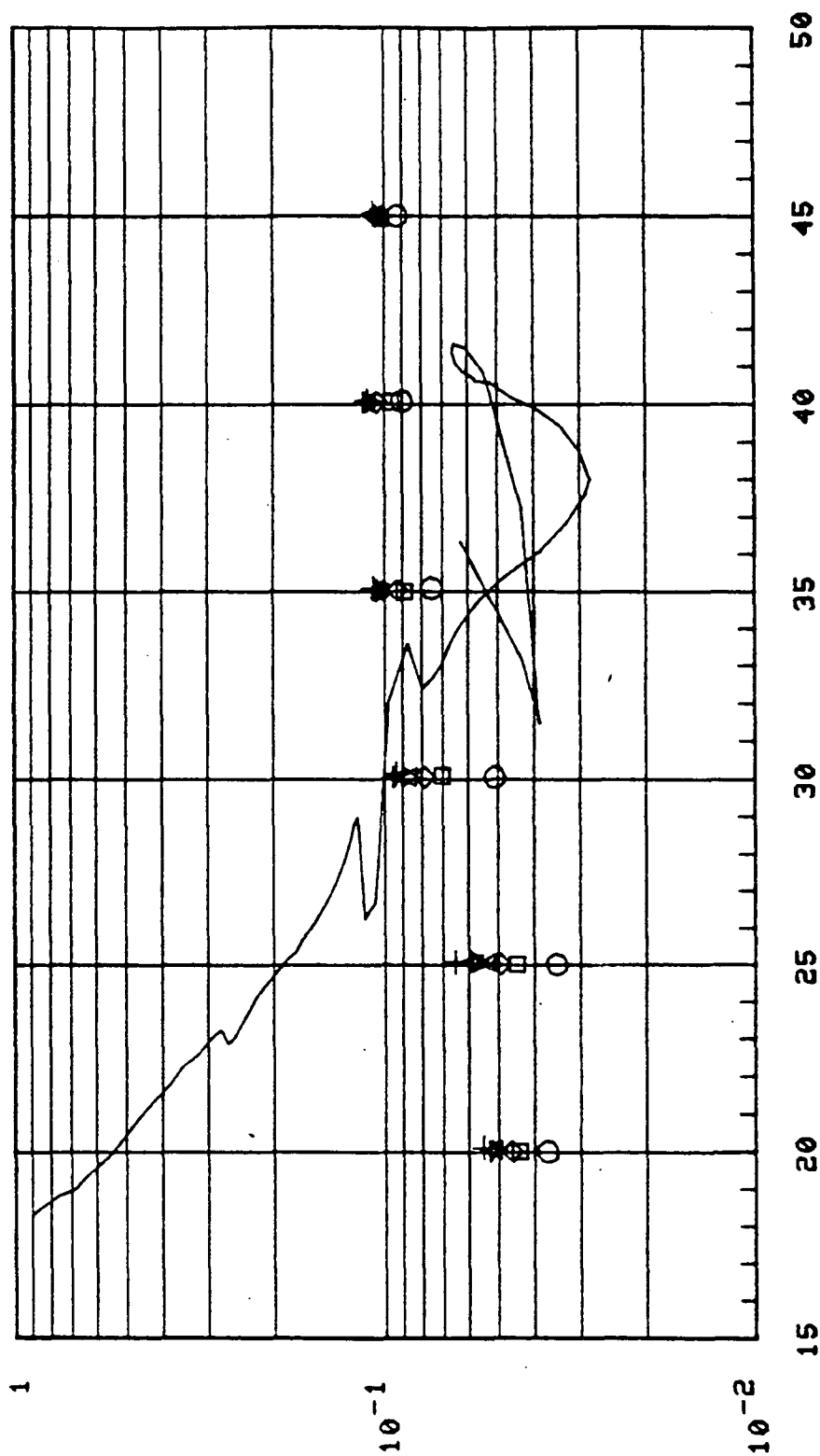
ANGLE-OF-ATTACK - DEG  
 BASE TIME • 07745684.000 SEC.  
 06/18/84

FLIGHT COEFF - H/H-REF

# STS-4 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

007T97364/H-REF 965-1300 SEC

O 0.0175 SCALE RE = 0.5 E06  
 □ 0.0175 SCALE RE = 1.0 E06  
 X 0.0175 SCALE RE = 1.5 E06  
 △ 0.0175 SCALE RE = 2.0 E06  
 ★ 0.0175 SCALE RE = 2.5 E06  
 + 0.0175 SCALE RE = 3.0 E06  
 0.0175 SCALE RE = 3.7 E06



FLIGHT COEFF - H/H-REF

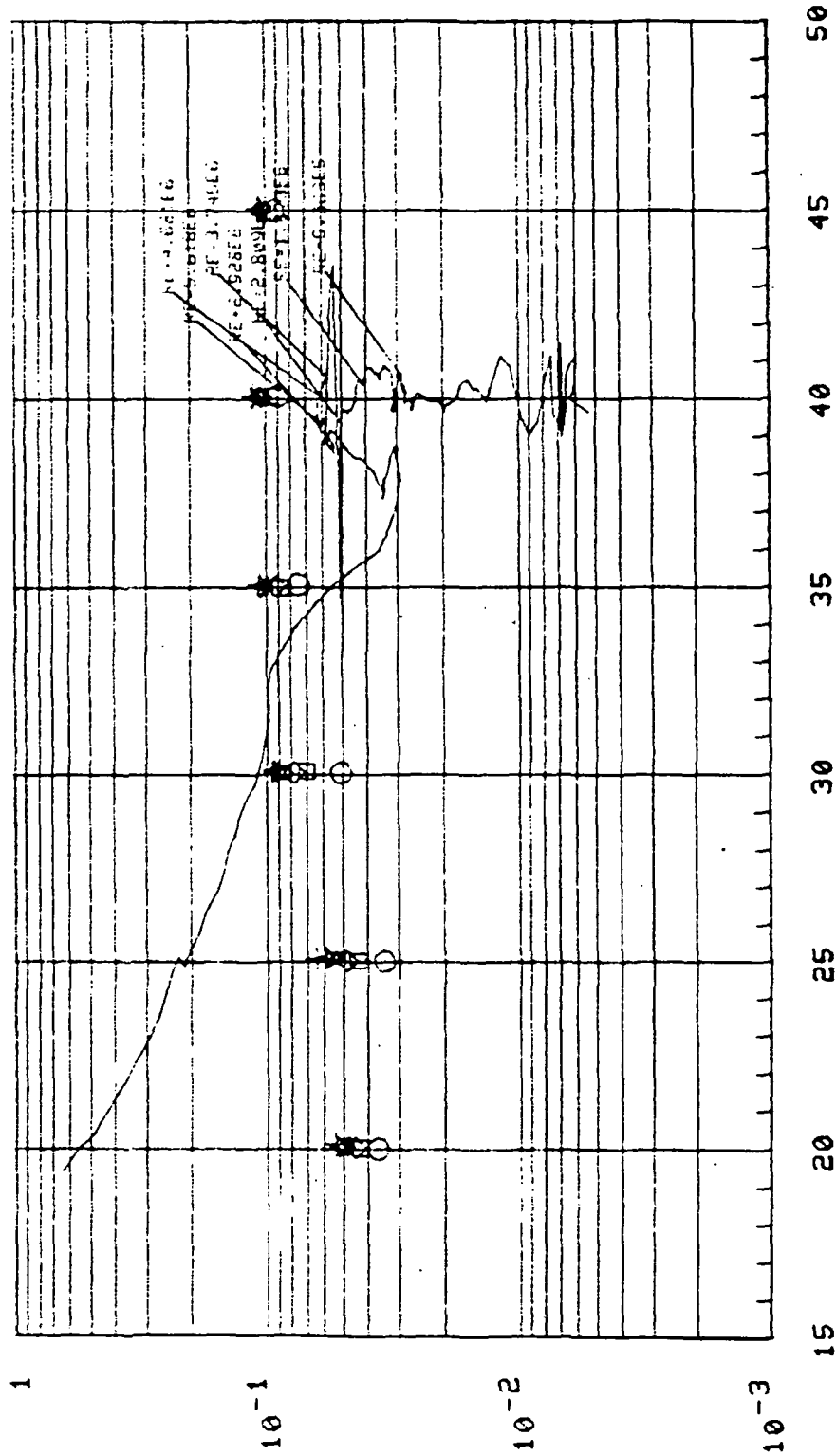
06/18/84  
BASE TIME - 16040423.000 SEC.

ANGLE-OF-ATTACK - DEG

# STS-5 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

O CH3 0.0175 SCALE RE = 0.5 E06  
 H CH3 0.0175 SCALE RE = 1.0 E06  
 A CH3 0.0175 SCALE RE = 1.5 E06  
 X CH3 0.0175 SCALE RE = 2.0 E06  
 Y CH3 0.0175 SCALE RE = 3.5 E06  
 + CH3 0.0175 SCALE RE = 3.0 E06  
 CH3 0.0175 SCALE RE = 1.7 E06

007197364/H-REF 150-1350 SEC



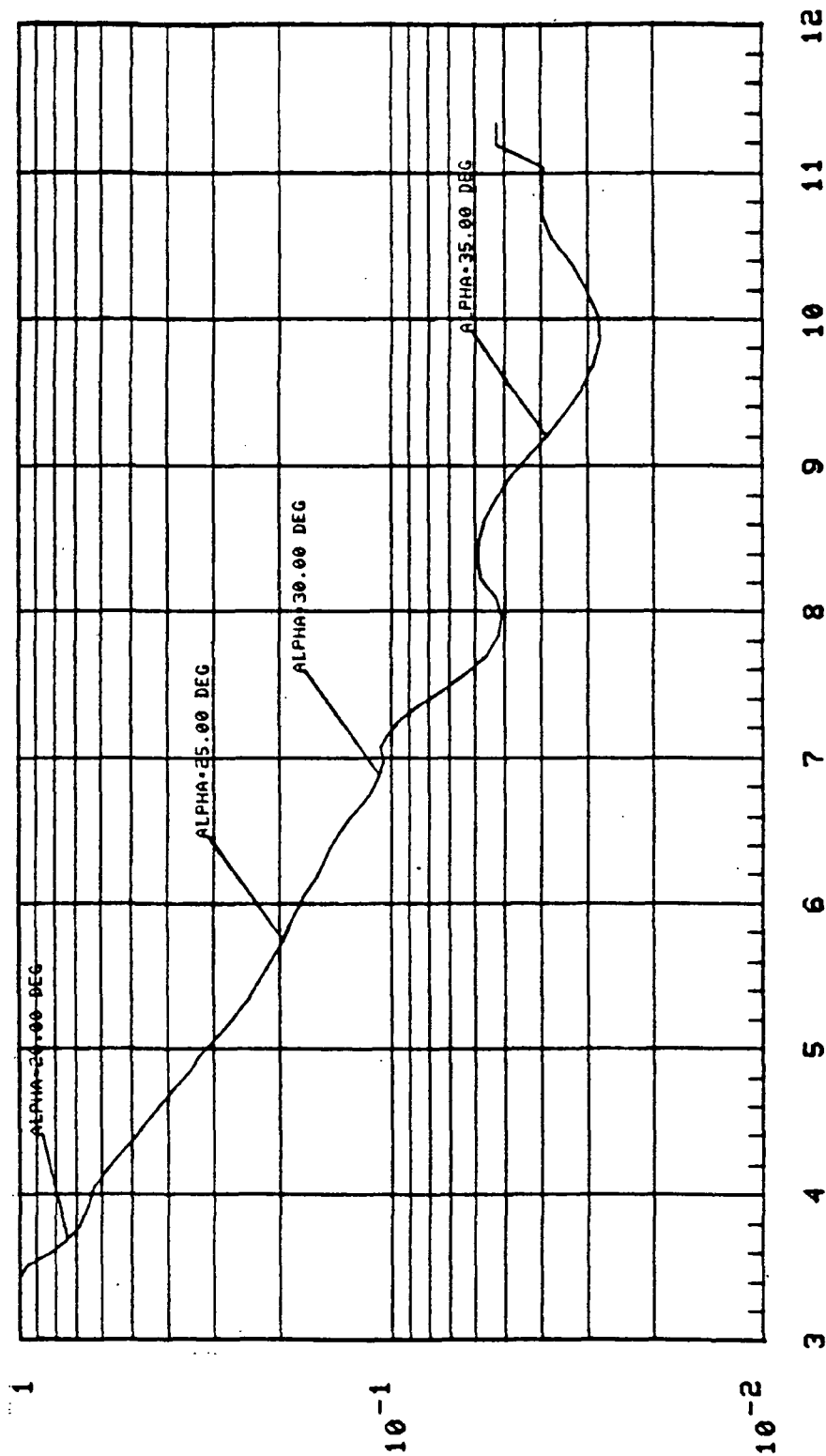
FILM COEFF - H/H-REF

ANGLE-OF-ATTACK - DEG  
 BASE TIME - 27698591.000 SEC.  
 06/19/84



# STS-1 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

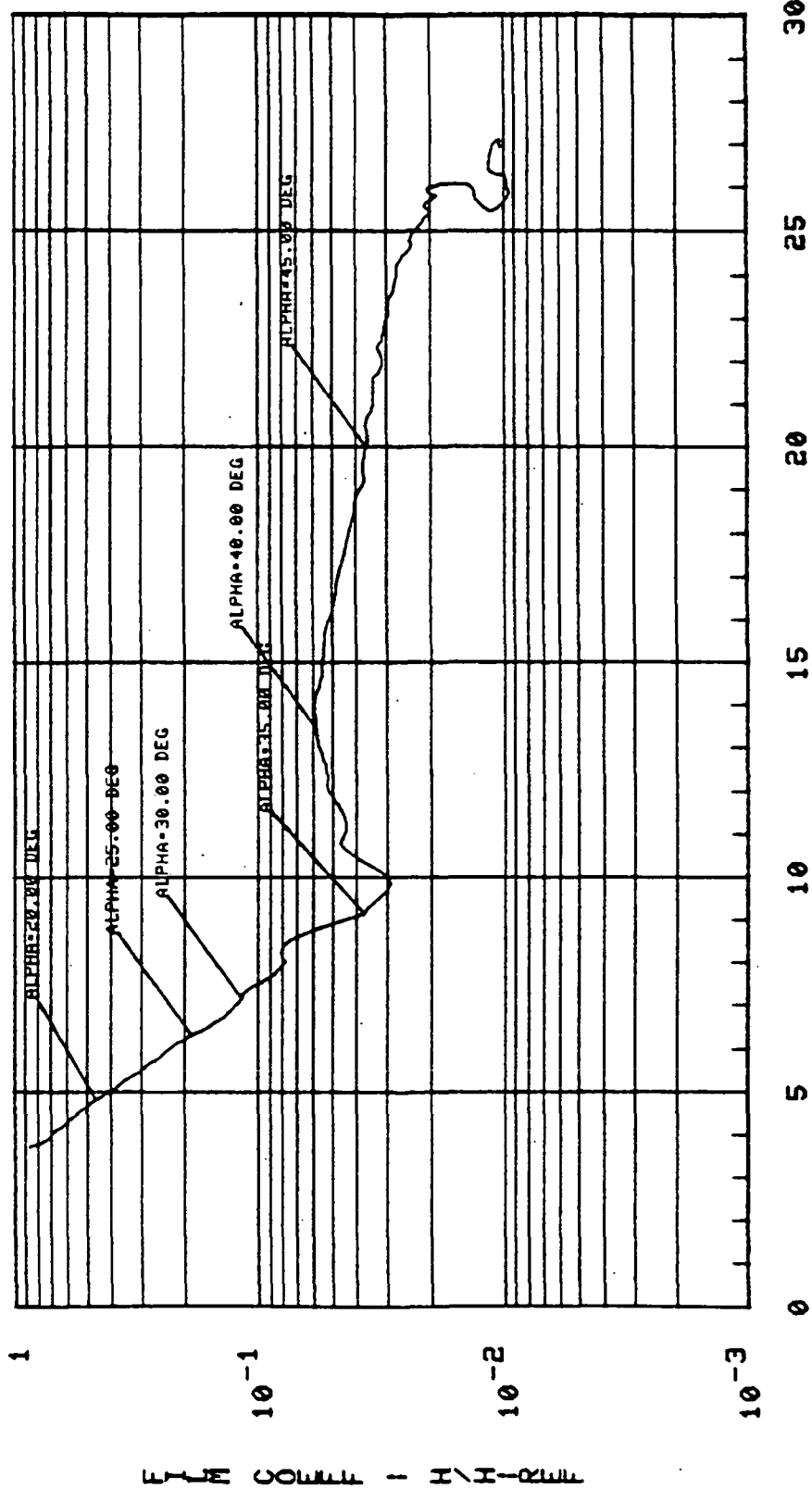
U07T9736A/H-REF 1065-1460 SEC



LIFT COEFF - H/H-REF

# STS-2 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

U07T97364/H-REF 200-1480 SEC



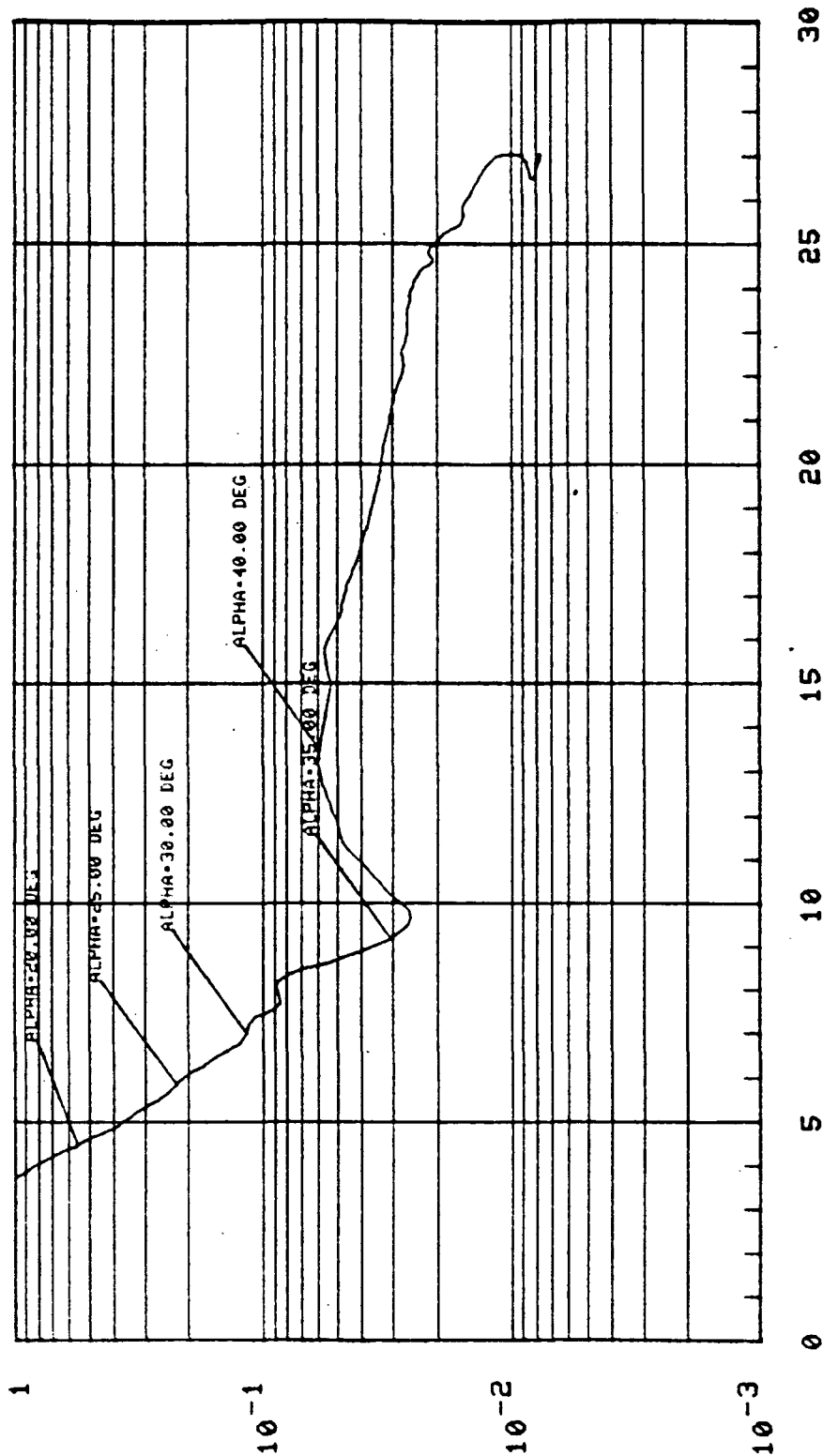
MACH NUMBER

06/18/84

BASE TIME - 27550336.000 SEC.

# STS-3 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

0070736H H-REF 200-1320 SEC



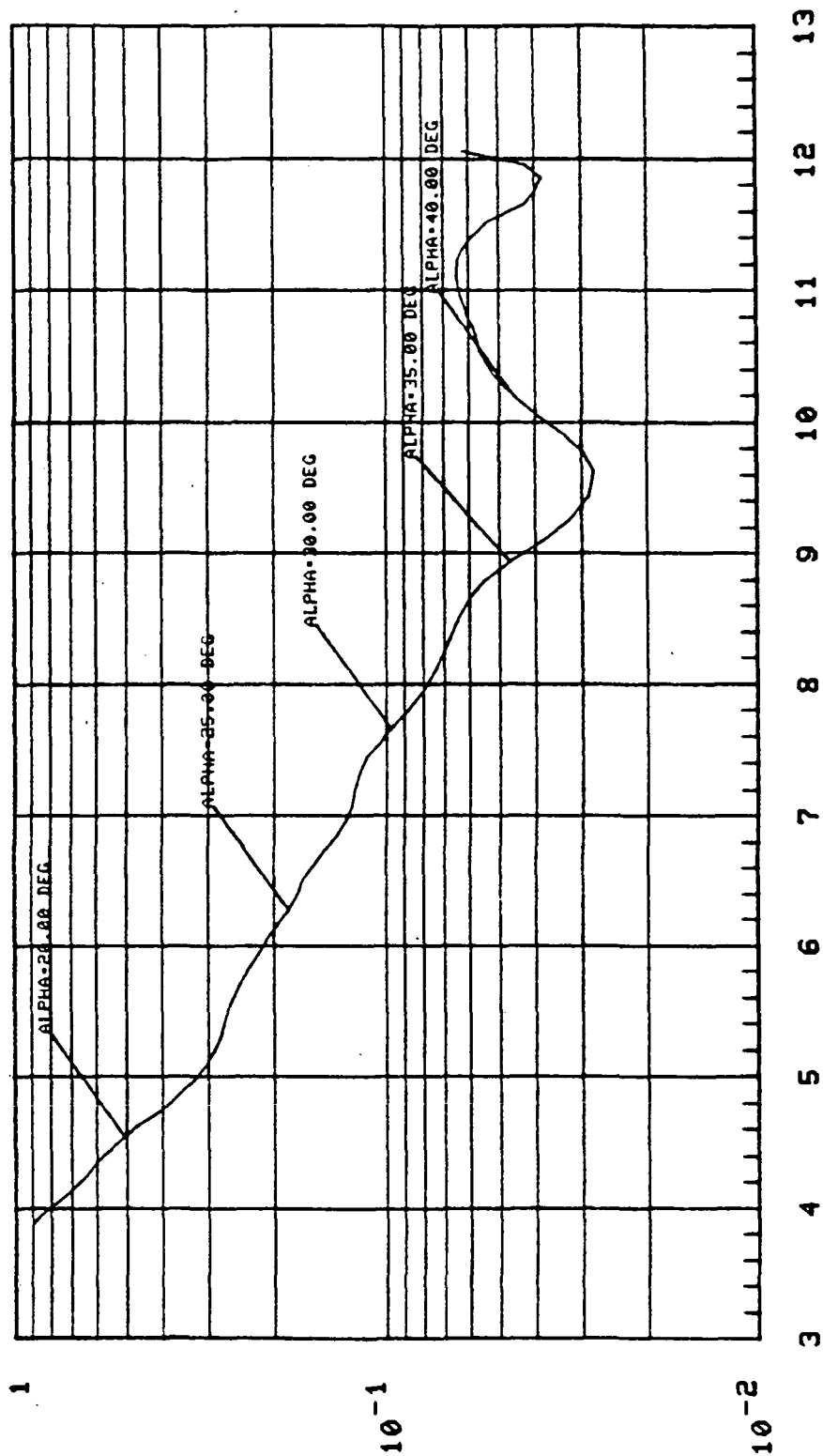
06/18/84  
BASE TIME - 07745684.000 SEC.

MACH NUMBER

LIFT COEFF - H/H-REF

# STS-4 (107 FT LENGTH CL $X/L=0.171$ ) FLIGHT PARAMETER COMPARIS

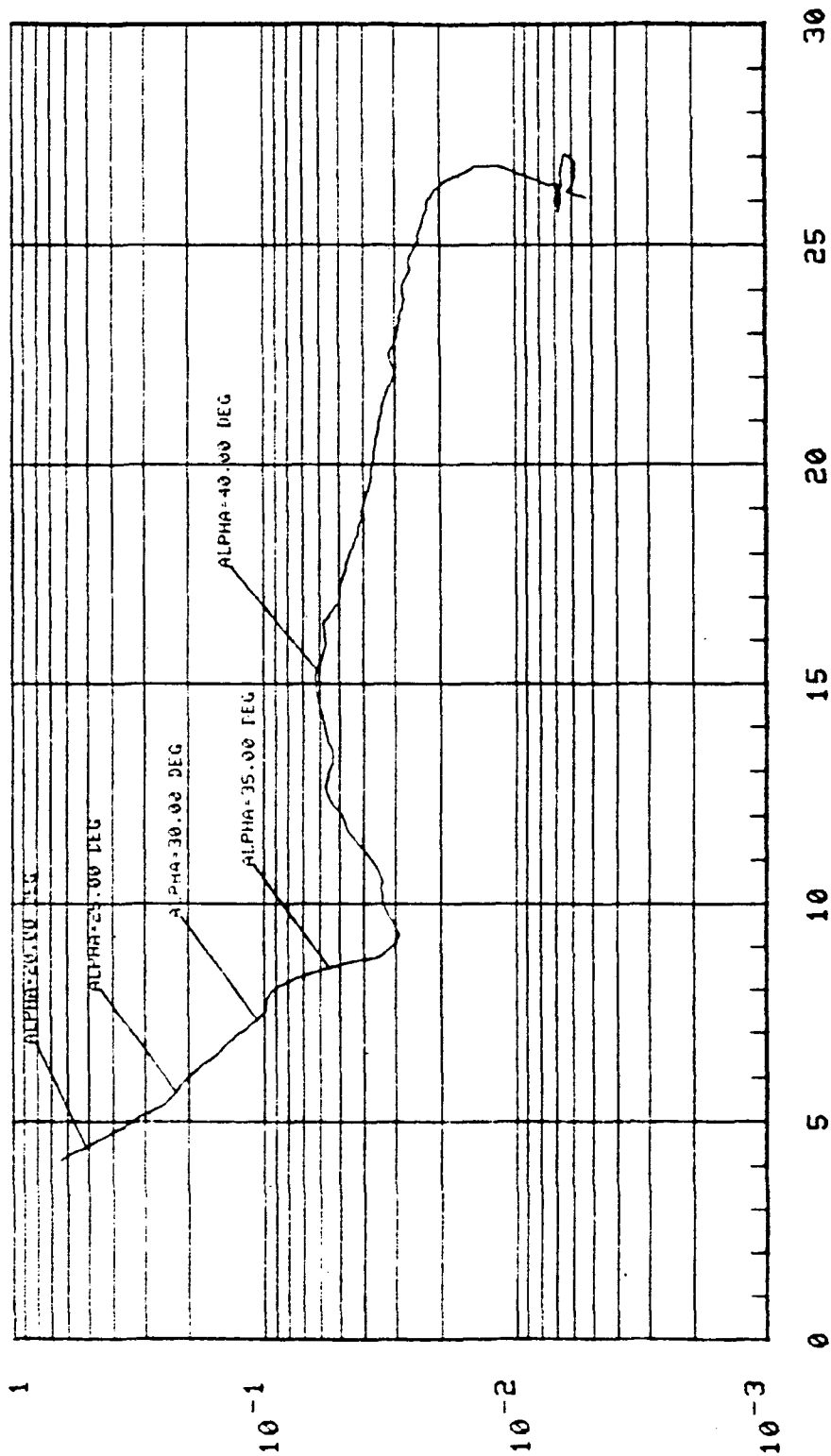
U07T97364/H-REF 965-1300 SEC



U07T97364 - H-REF

# STS-5 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

U07T9736H/H-REF 150-1350 SEC



06/19/84  
BASE TIME = 27698591.000 SEC.

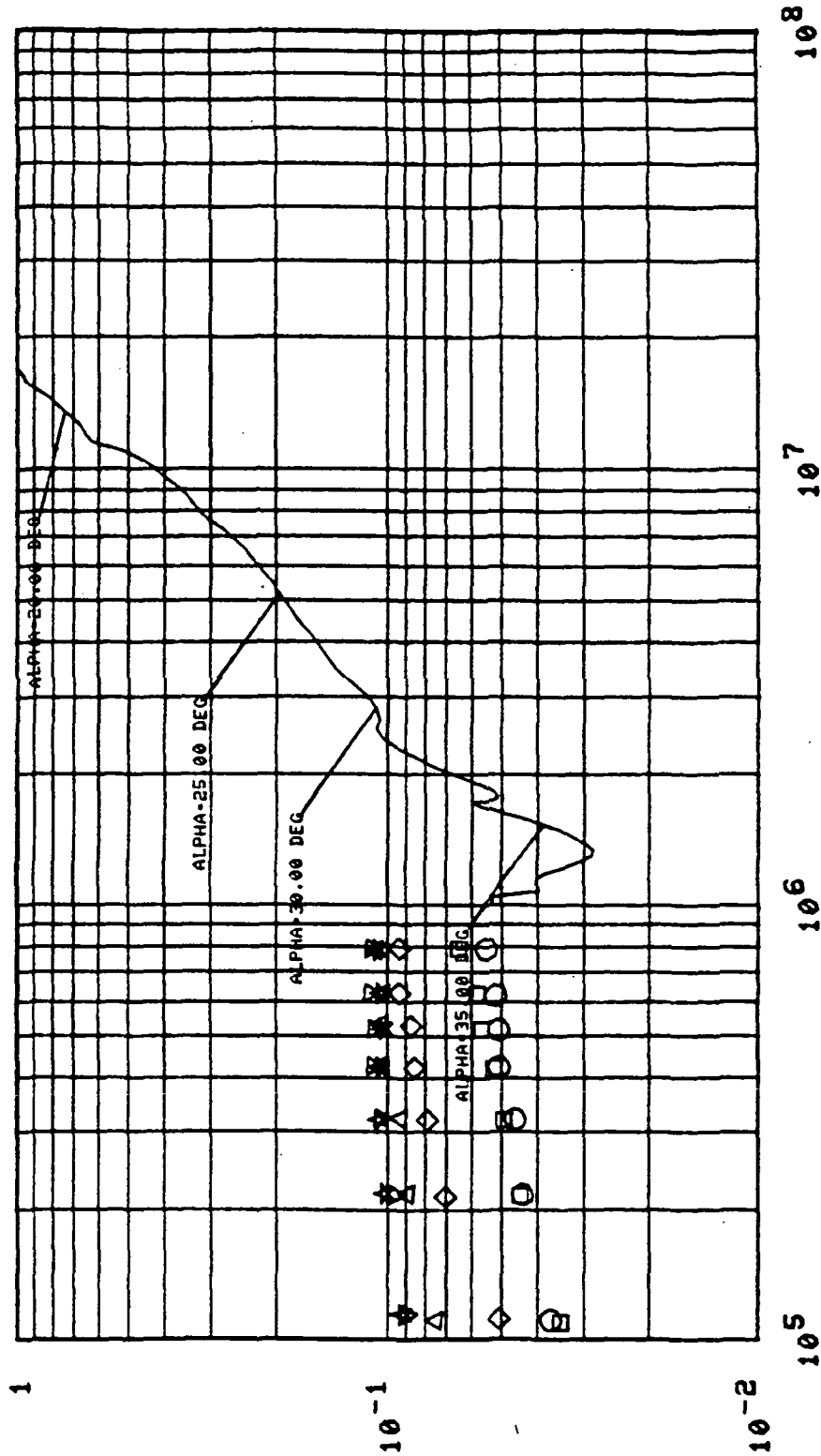
MACH NUMBER

FILM COEFF = H/H-REF

# STS-1 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

O H39 ALPHA - 20 DEGREES  
 □ H39 ALPHA - 25 DEGREES  
 X H39 ALPHA - 30 DEGREES  
 △ H39 ALPHA - 35 DEGREES  
 ☆ H39 ALPHA - 40 DEGREES  
 \* H39 ALPHA - 45 DEGREES

U07T9736A/H-REF 1065-1460 SEC



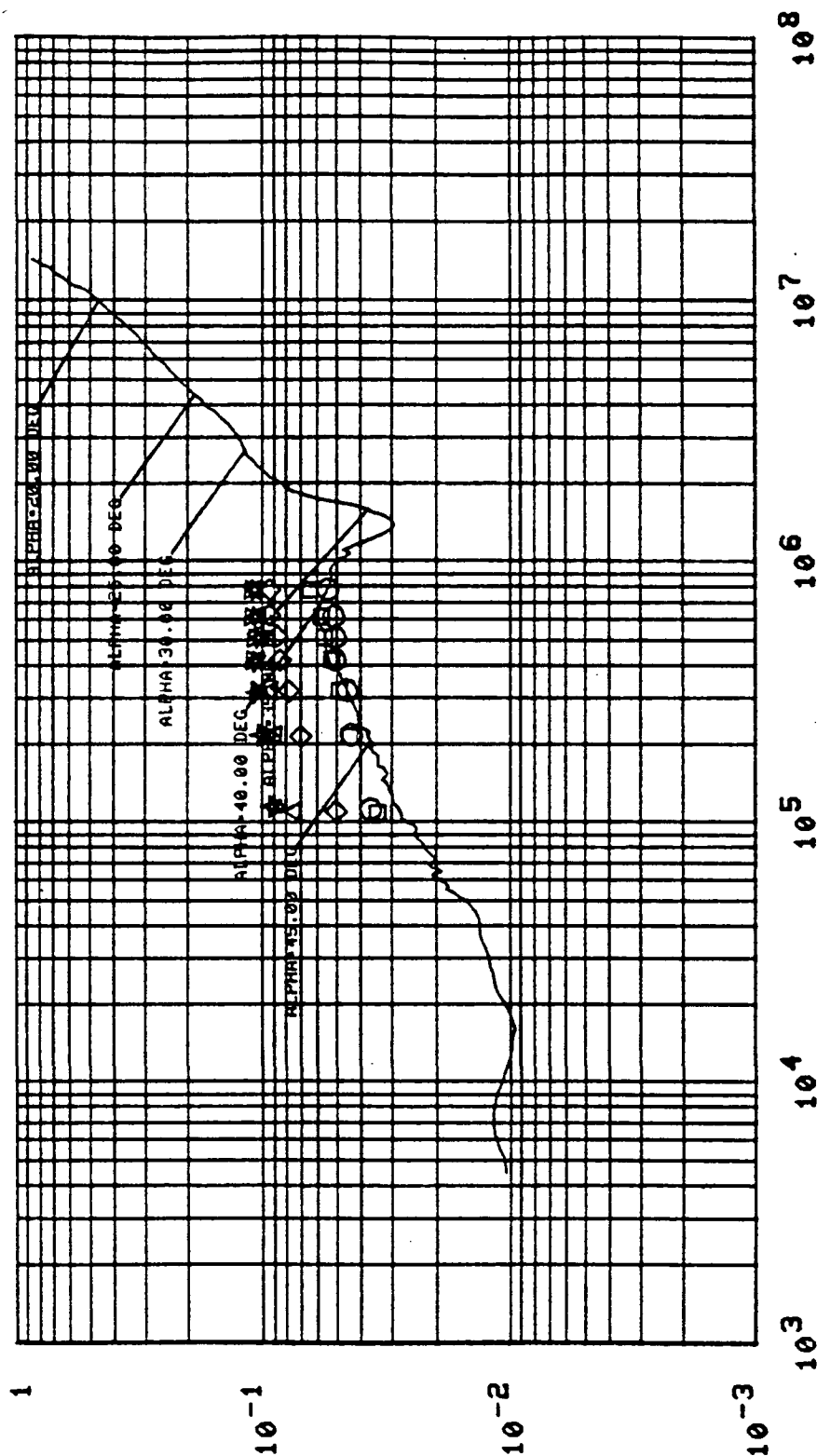
LIFT COEFF - H-H-REF

REYNOLDS NUMBER (NS)  
 BASE TIME - 00049744.000 SEC.  
 06/18/84

# STS-2 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

O H39 ALPHA - 20 DEGREES  
 □ H39 ALPHA - 25 DEGREES  
 X H39 ALPHA - 30 DEGREES  
 △ H39 ALPHA - 35 DEGREES  
 \* H39 ALPHA - 40 DEGREES  
 \* H39 ALPHA - 45 DEGREES

U07T9736A/H-REF 200-1480 SEC



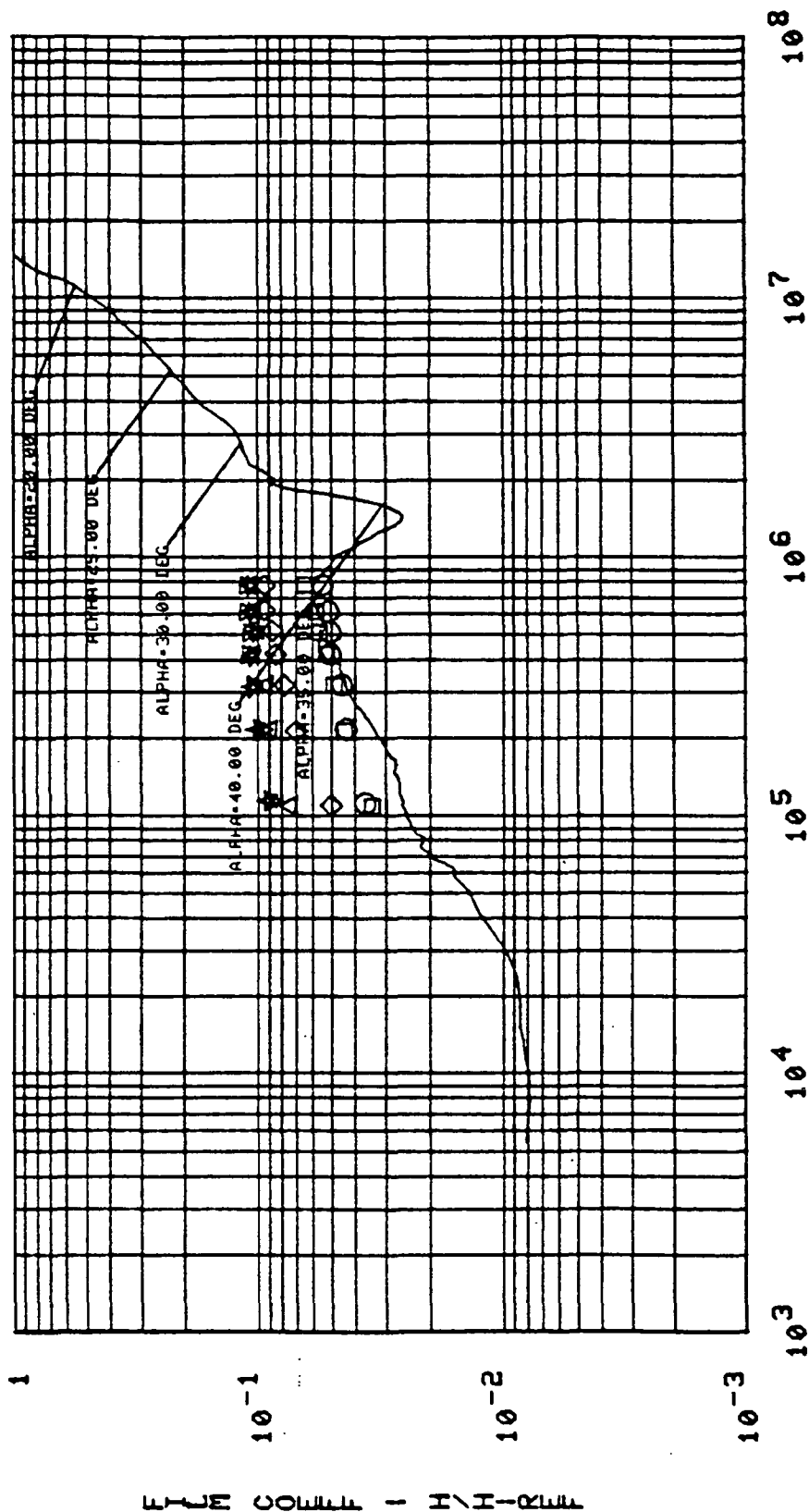
U07T9736A/H-REF

REYNOLDS NUMBER (NS) 06/18/84  
 BASE TIME - 27550236.000 SEC.

# STS-3 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

O H39 ALPHA - 20 DEGREES  
 □ H39 ALPHA - 25 DEGREES  
 △ H39 ALPHA - 30 DEGREES  
 × H39 ALPHA - 35 DEGREES  
 ☆ H39 ALPHA - 40 DEGREES  
 ★ H39 ALPHA - 45 DEGREES

U07T9736A/H-REF 200-1380 SEC



REYNOLDS NUMBER (NS) 06/18/84  
 BASE TIME - 07745684.000 SEC.

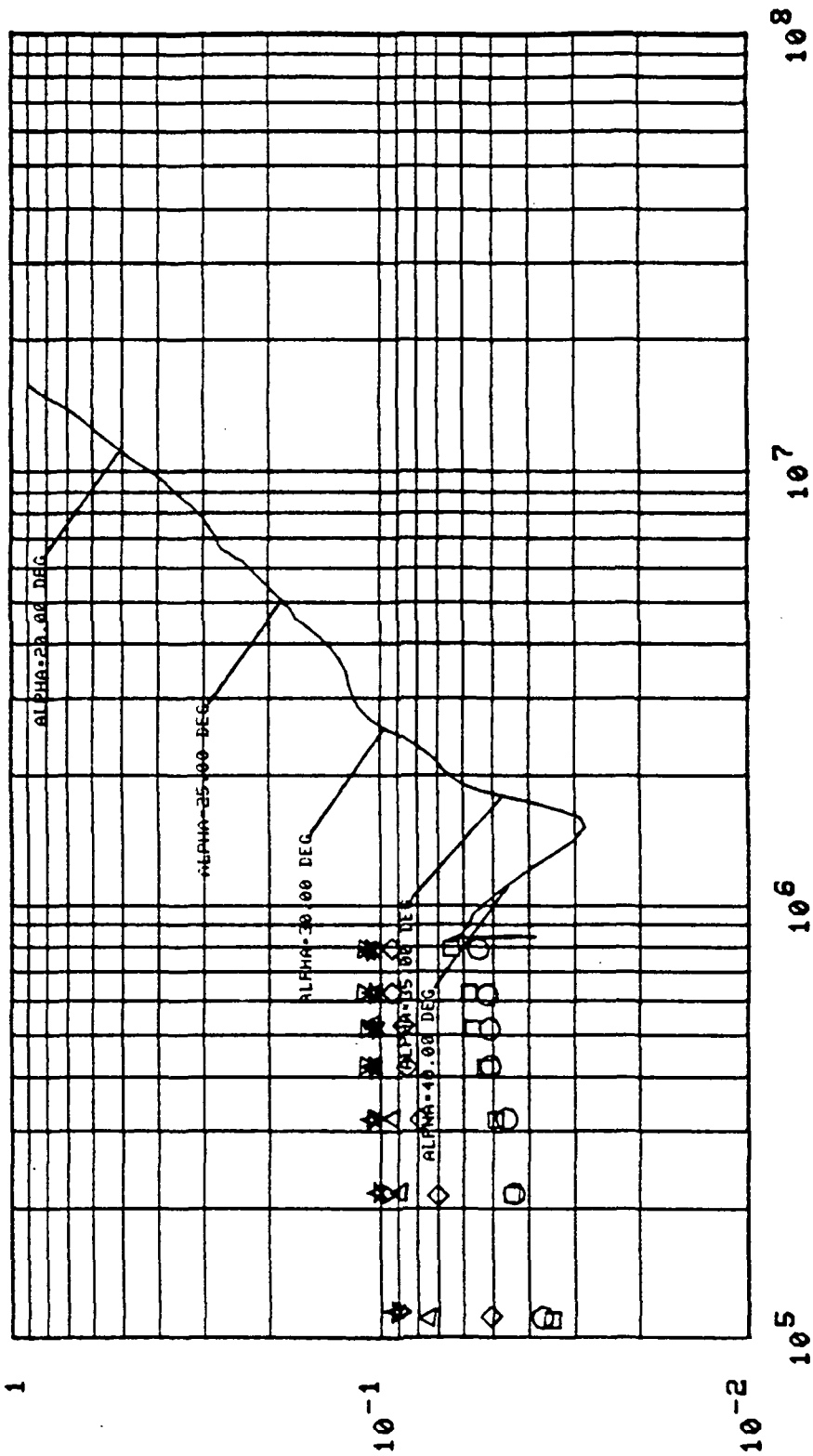


# STS-4 (107 FT LENGTH CL X/L-0.171) FLIGHT PARAMETER COMPARIS

U07T9736A/H-REF 965-1300 SEC

- OH39 ALPHA - 20 DEGREES
- OH39 ALPHA - 25 DEGREES
- OH39 ALPHA - 30 DEGREES
- OH39 ALPHA - 35 DEGREES
- OH39 ALPHA - 40 DEGREES
- OH39 ALPHA - 45 DEGREES

○ □ ◇ △ ★



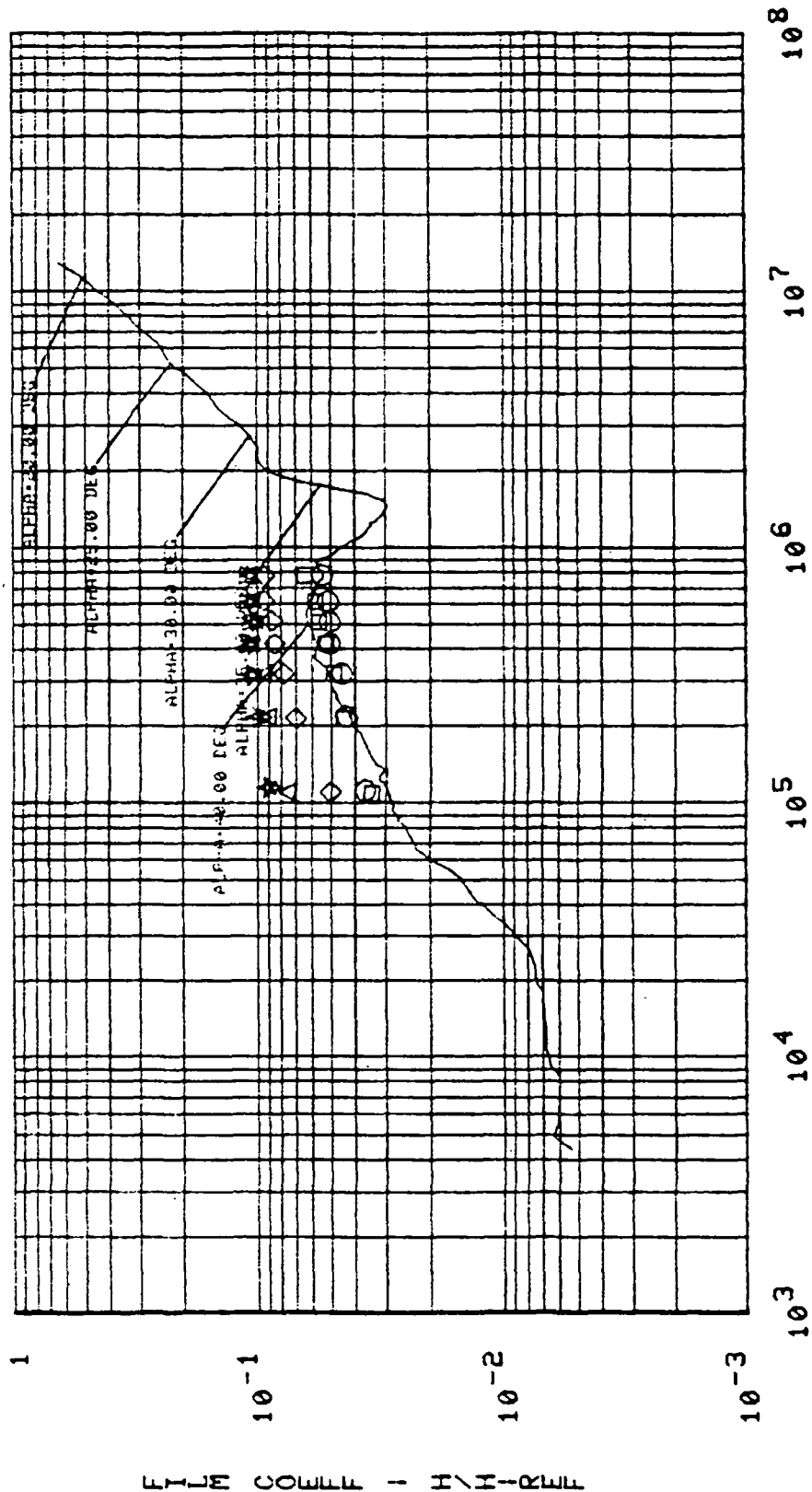
FLIGHT COMPARIS - H/H-REF

# STS-5 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

067797364/H-REF 150-1350 SEC

- 0139 ALPHA = 20 DEGREES
- 0139 ALPHA = 25 DEGREES
- 0139 ALPHA = 30 DEGREES
- 0139 ALPHA = 35 DEGREES
- 0139 ALPHA = 40 DEGREES
- 0139 ALPHA = 45 DEGREES

○ □ × ☆

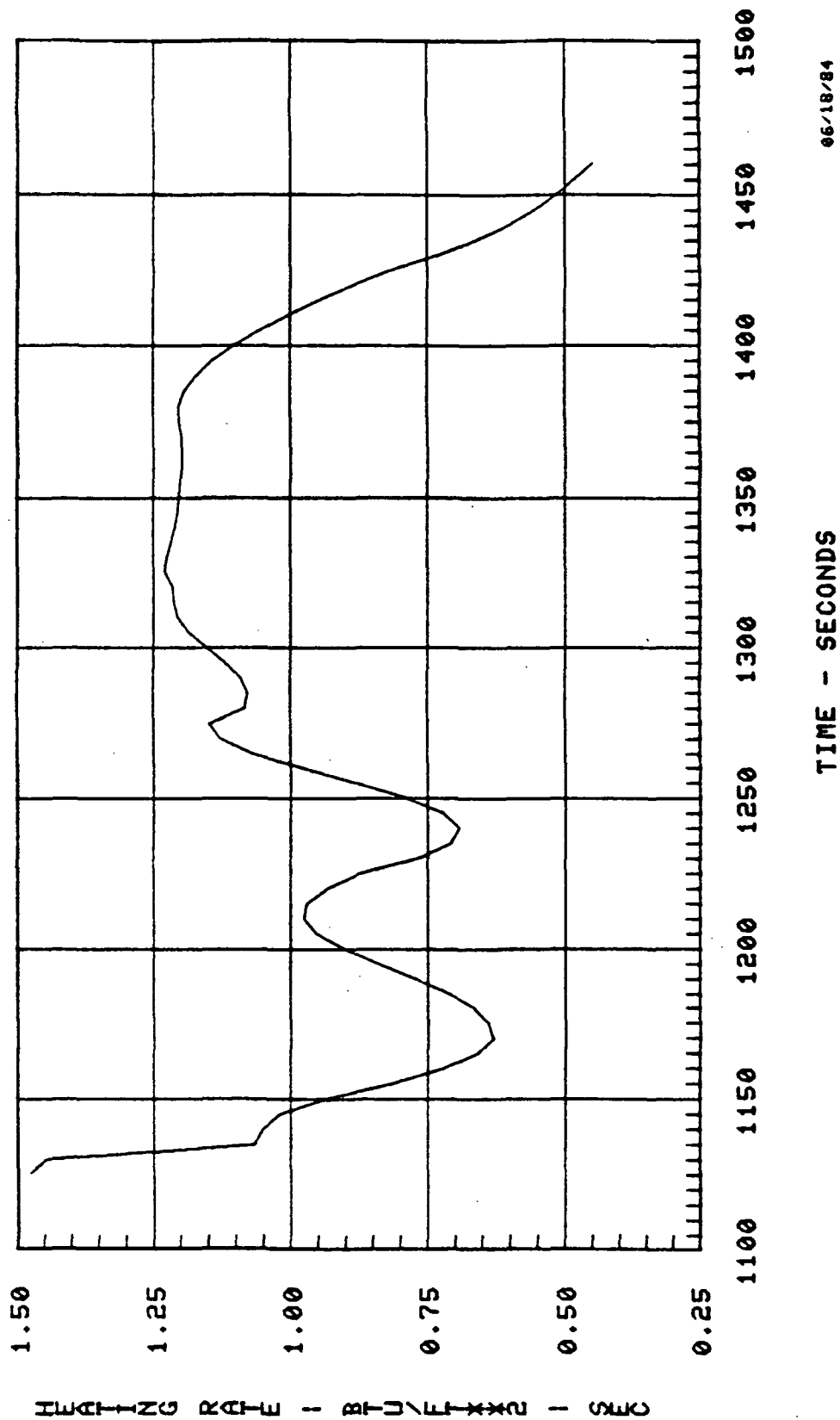


06/19/84  
BASE TIME - 27698591.000 SEC.

REYNOLDS NUMBER (NS)

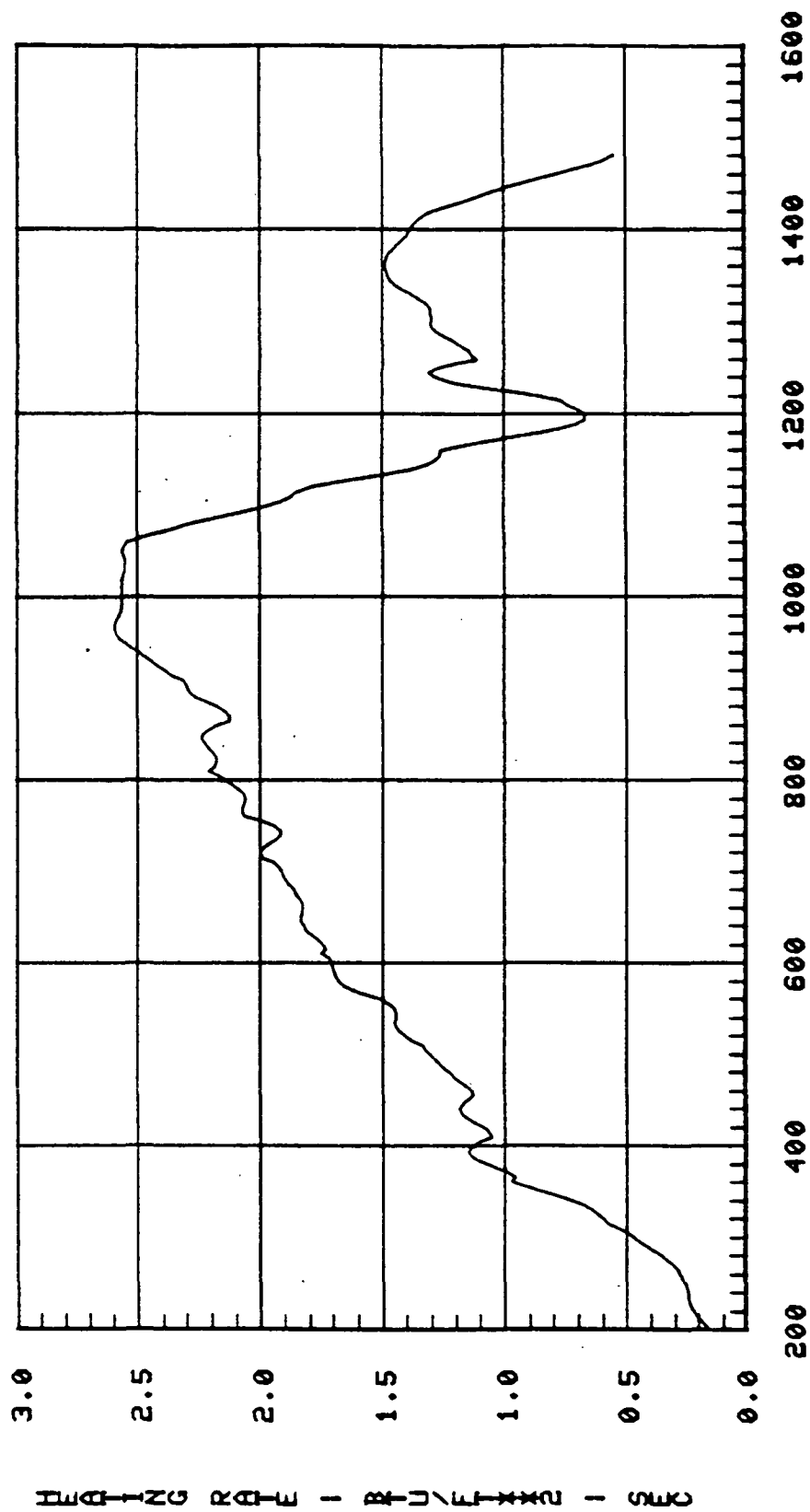
# STS-1 (107 FT LENGTH CL $X/L=0.171$ ) FLIGHT PARAMETER COMPARIS

007T9736A



# STS-2 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

U07T97364

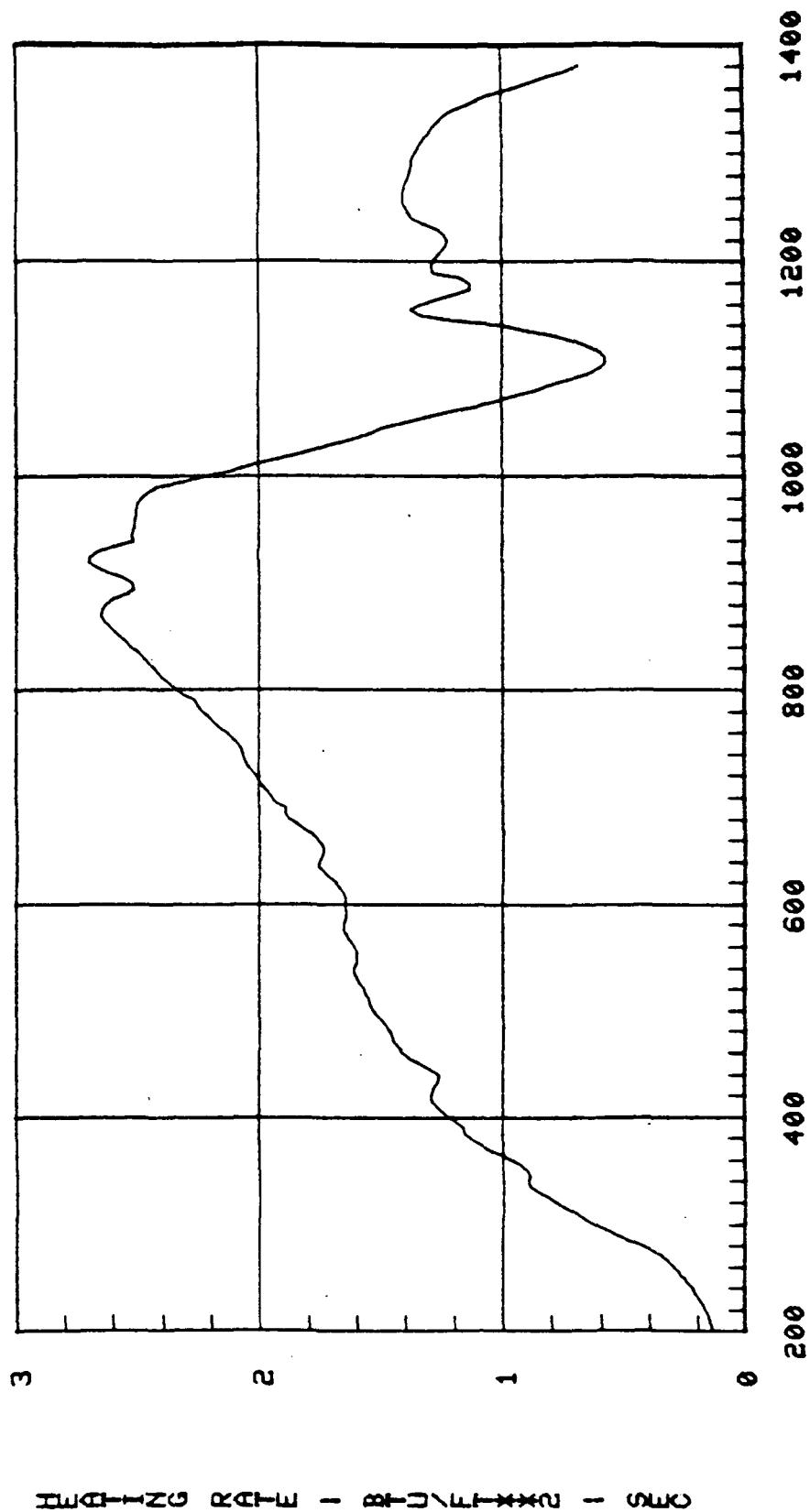


TIME - SECONDS

06/18/84

# STS-3 (107 FT LENGTH CL $X/L=0.171$ ) FLIGHT PARAMETER COMPARIS

U07T9736A



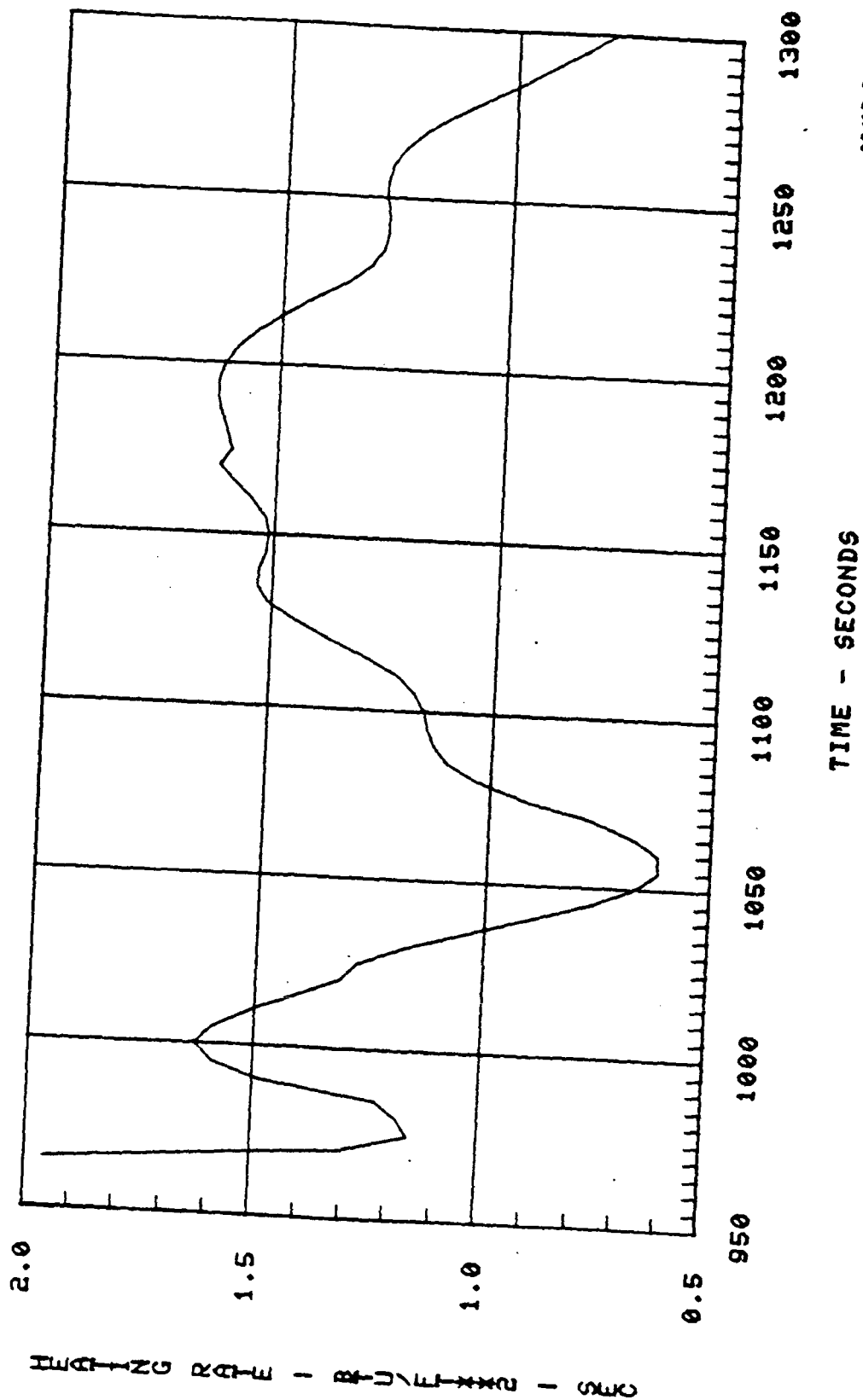
TIME - SECONDS

06/18/84

HEATING RATE - BTU/FT\*\*2 - SEC

STS-4 (107 FT LENGTH CL  $X/L=0.171$ ) FLIGHT PARAMETER COMPARIS

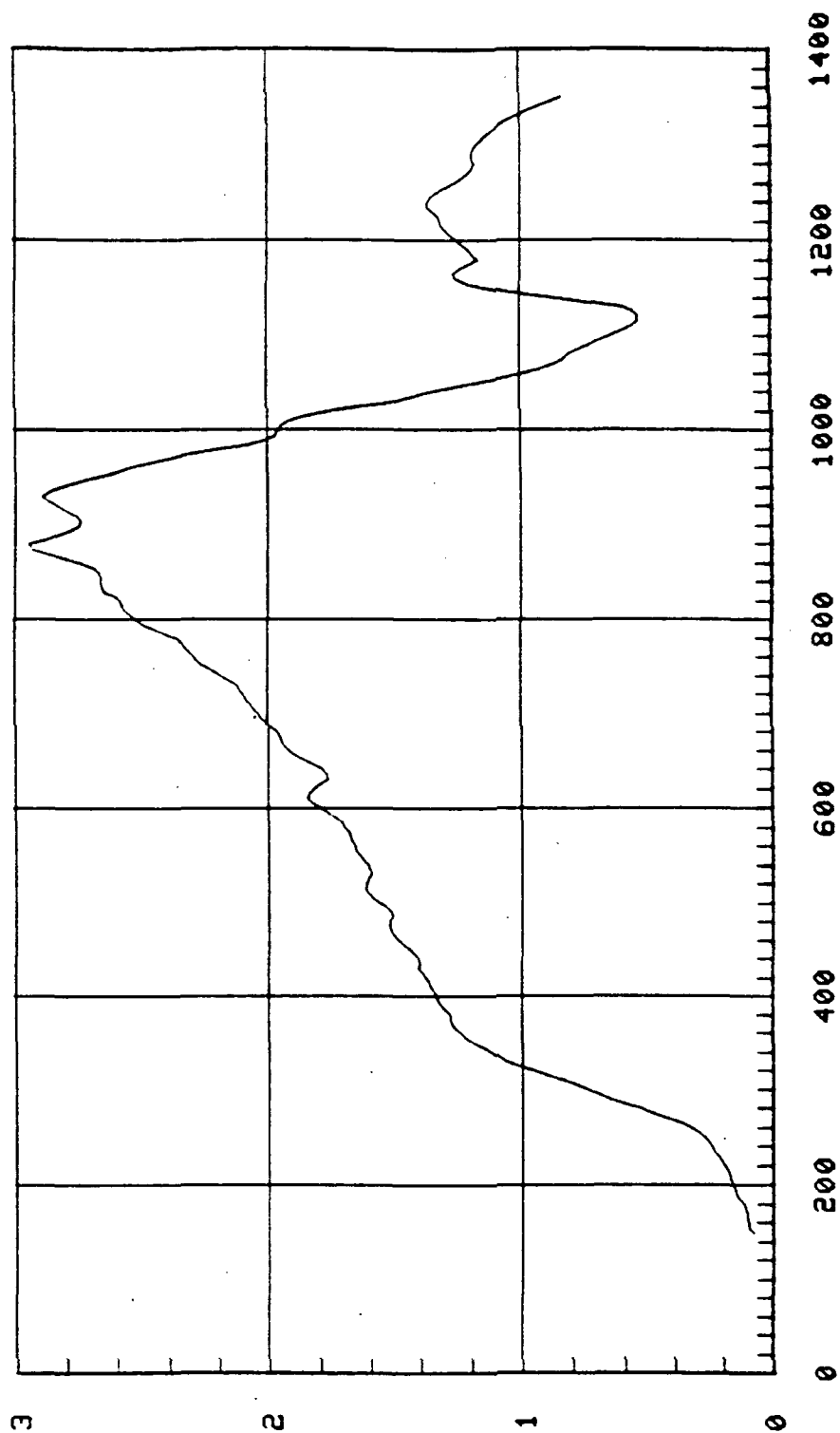
U07T9736A



06/18/84

# STS-5 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

U07T3736A



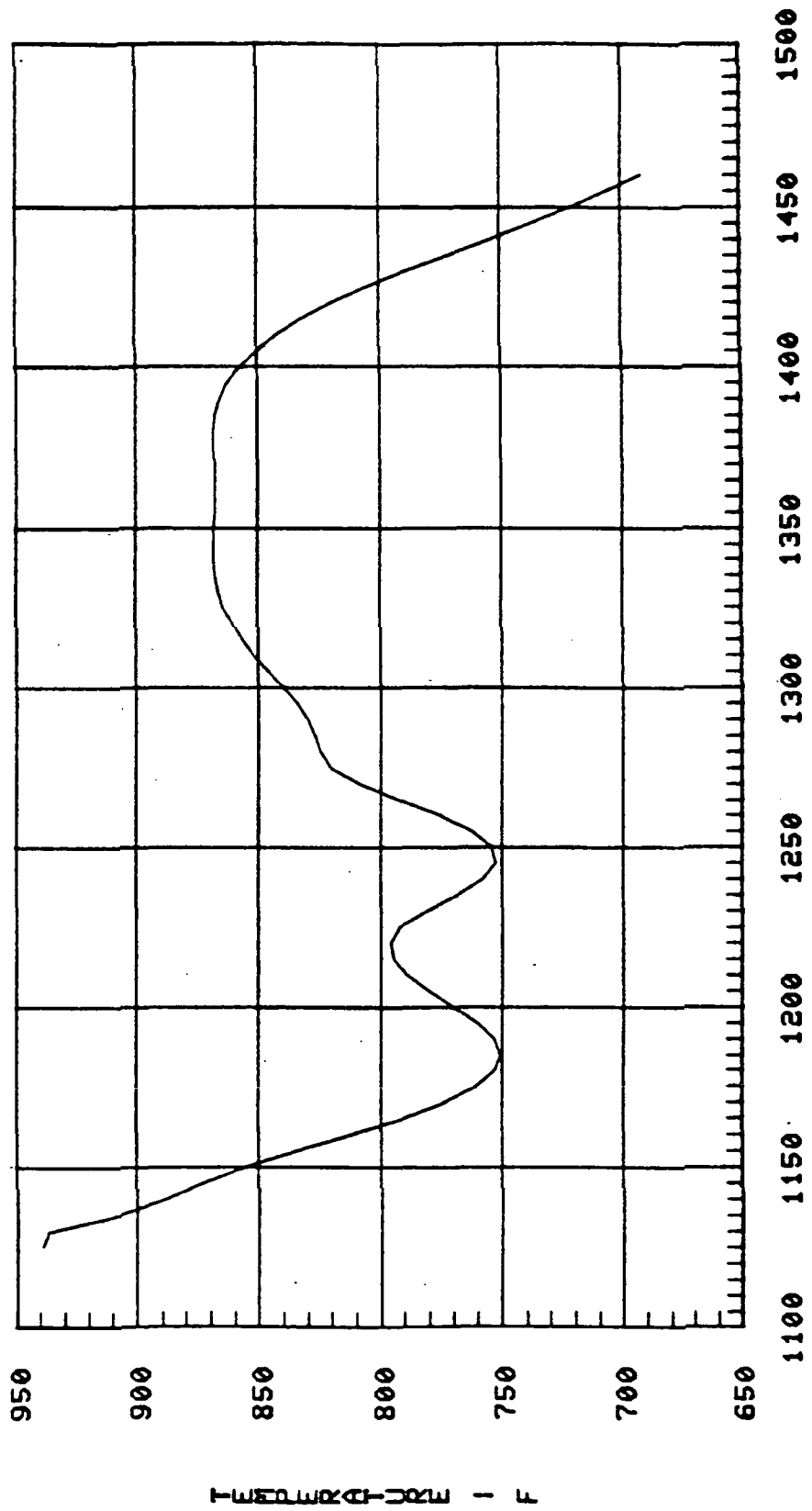
TIME - SECONDS

06/19/84

HEATING RATE - BTU/FT\*\*2 - SEC

STS-1 (107 FT LENGTH CL  $X/L=0.171$ ) FLIGHT PARAMETER COMPARIS

\_\_\_\_\_ U07T9736H



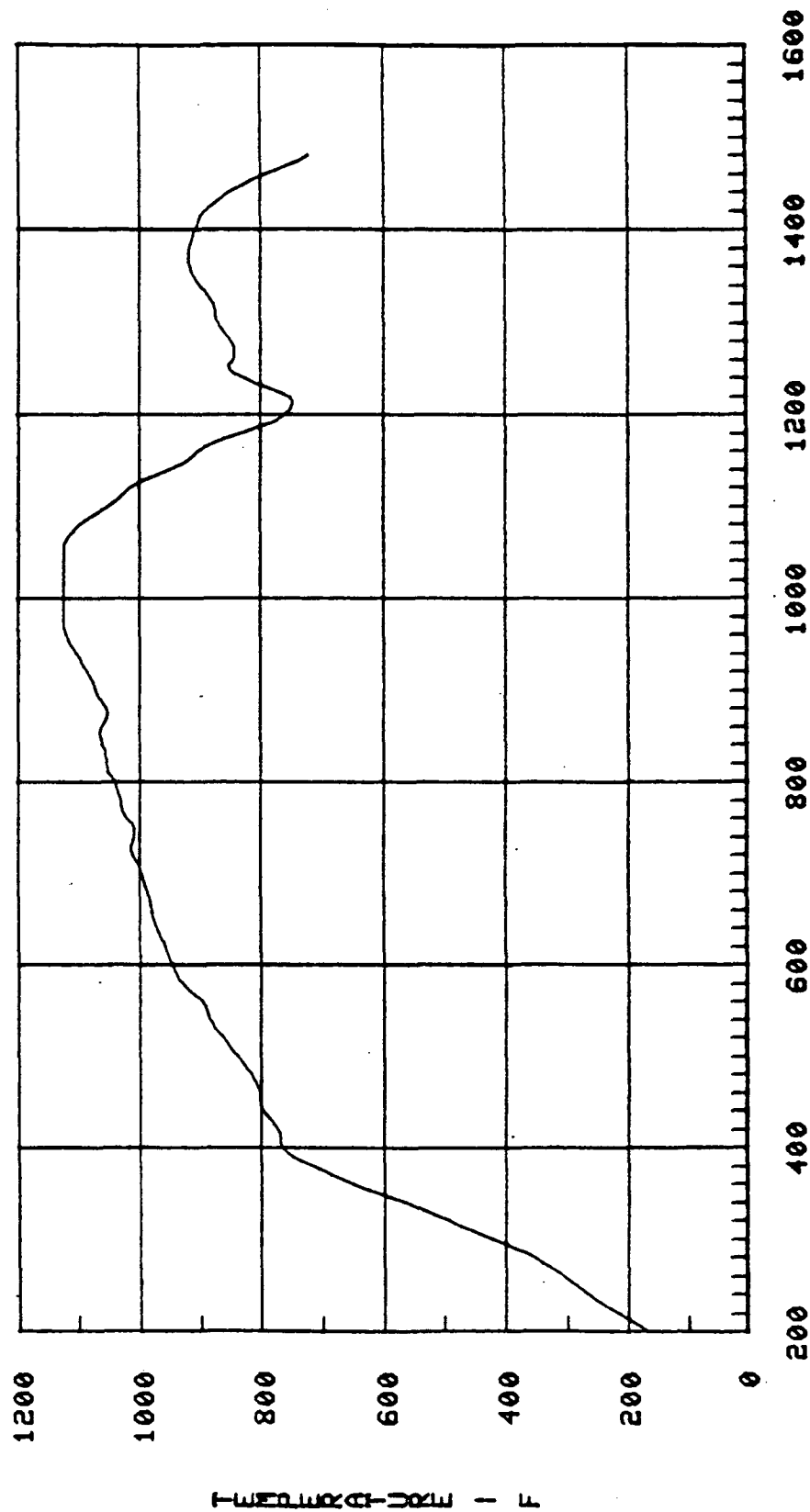
TIME - SECONDS

06/18/84



# STS-2 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

U0719736A

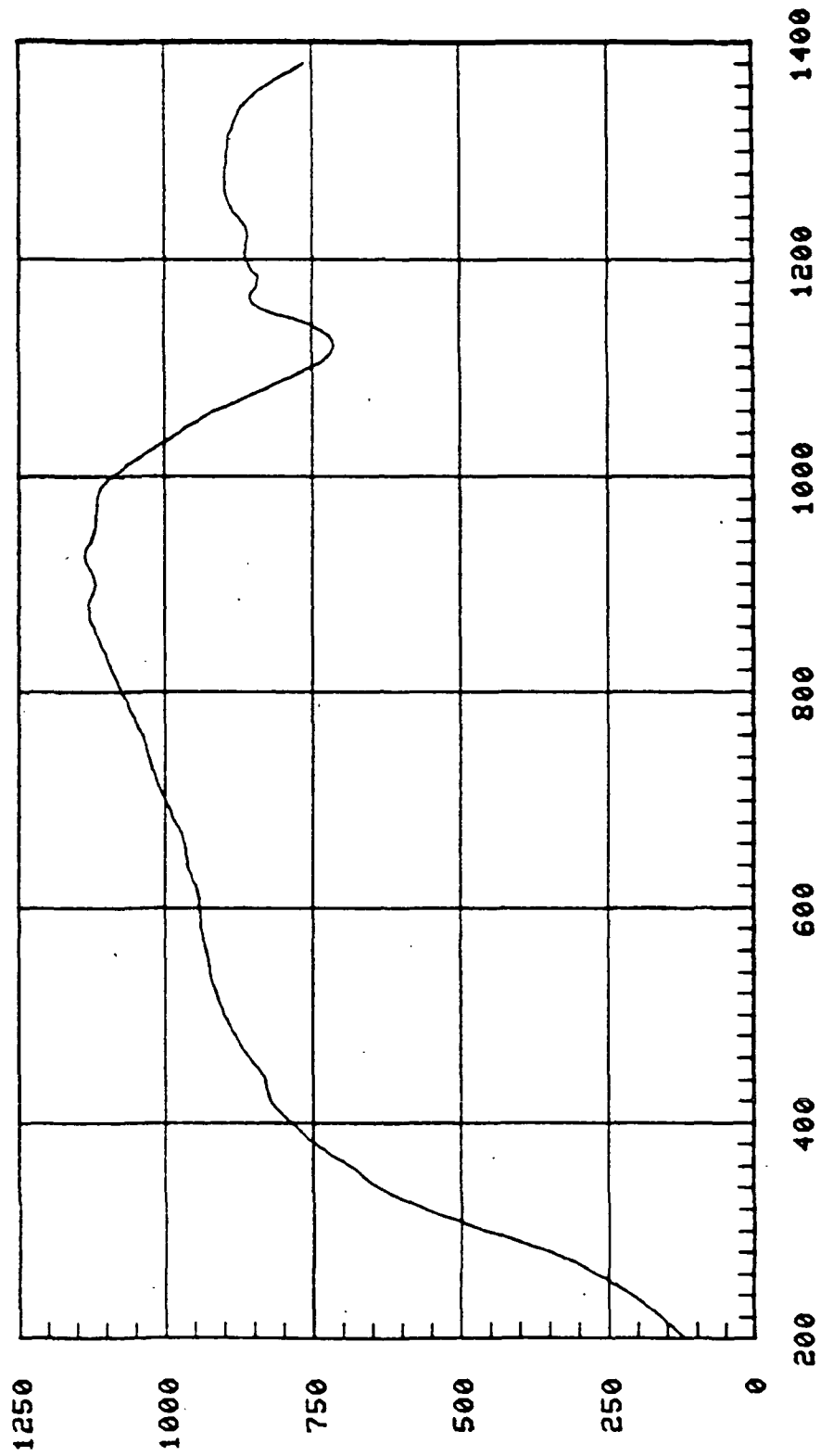


TIME - SECONDS

06/18/84

# STS-3 (107 FT LENGTH CL $X/L=0.171$ ) FLIGHT PARAMETER COMPARIS

U07T5736A

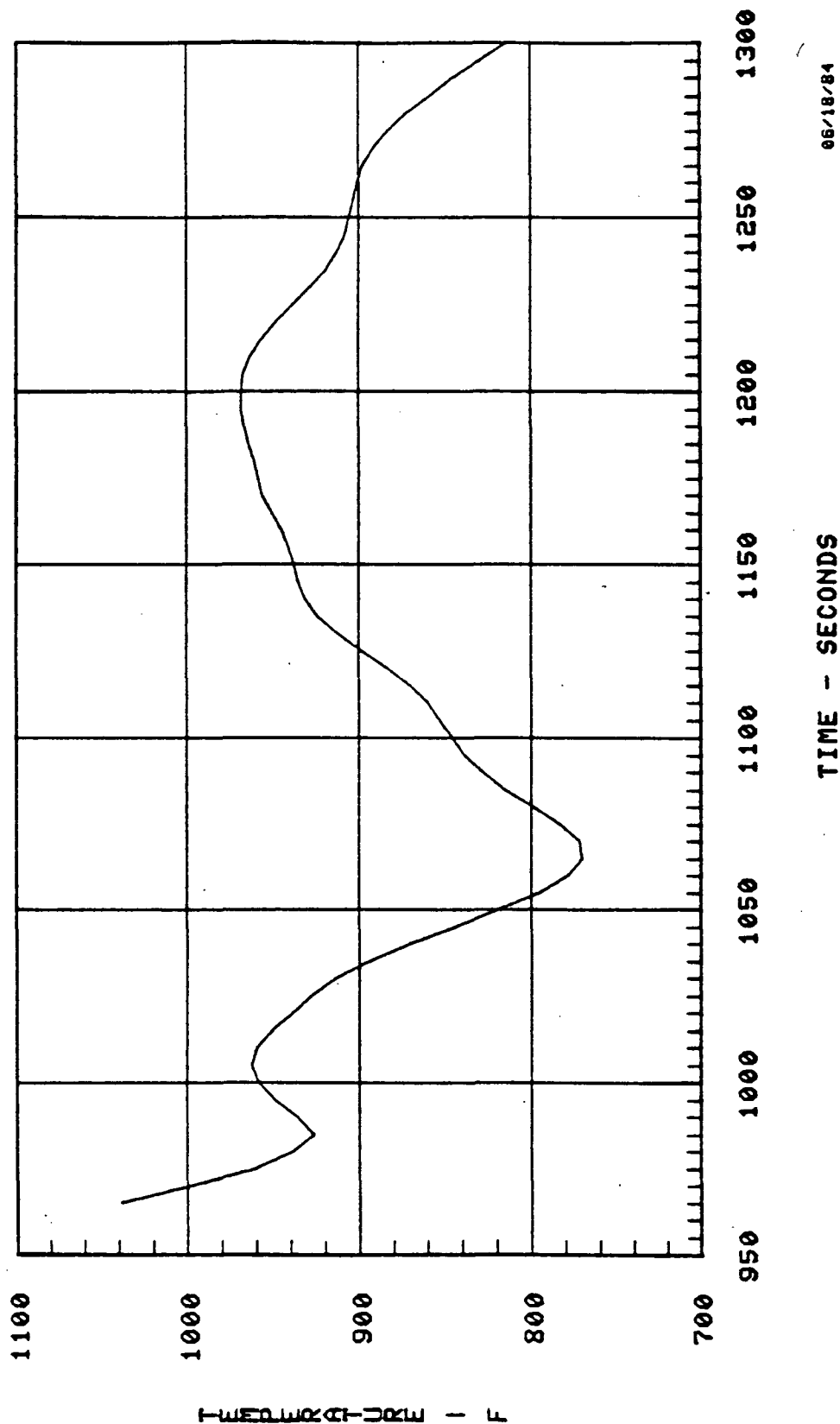


TIME - SECONDS

06/18/84

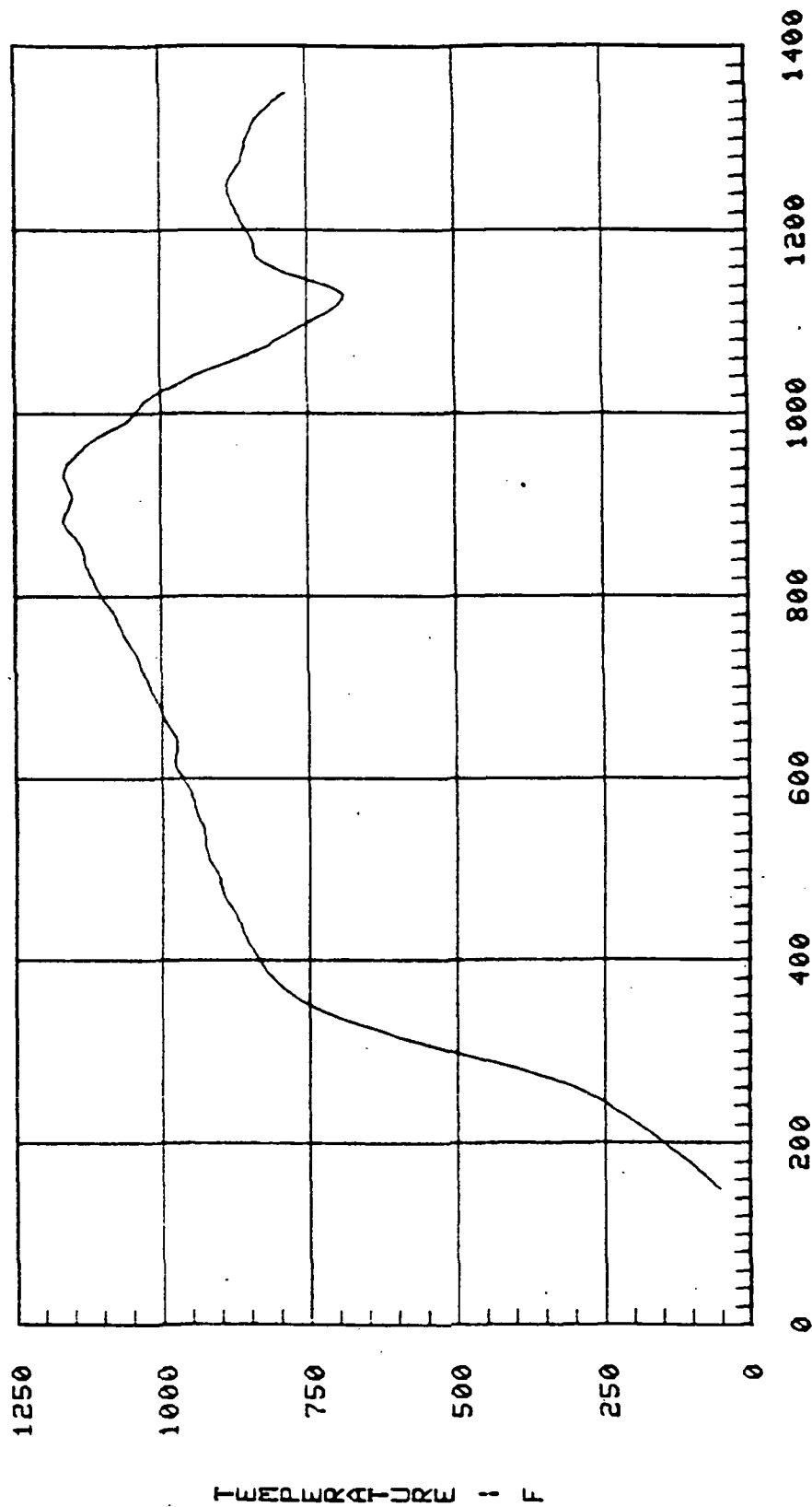
# STS-4 (107 FT LENGTH CL X/L=0.171) FLIGHT PARAMETER COMPARIS

U07T97364



# STS-5 (107 FT LENGTH CL $X/L=0.171$ ) FLIGHT PARAMETER COMPARIS

U07T97364



TIME - SECONDS

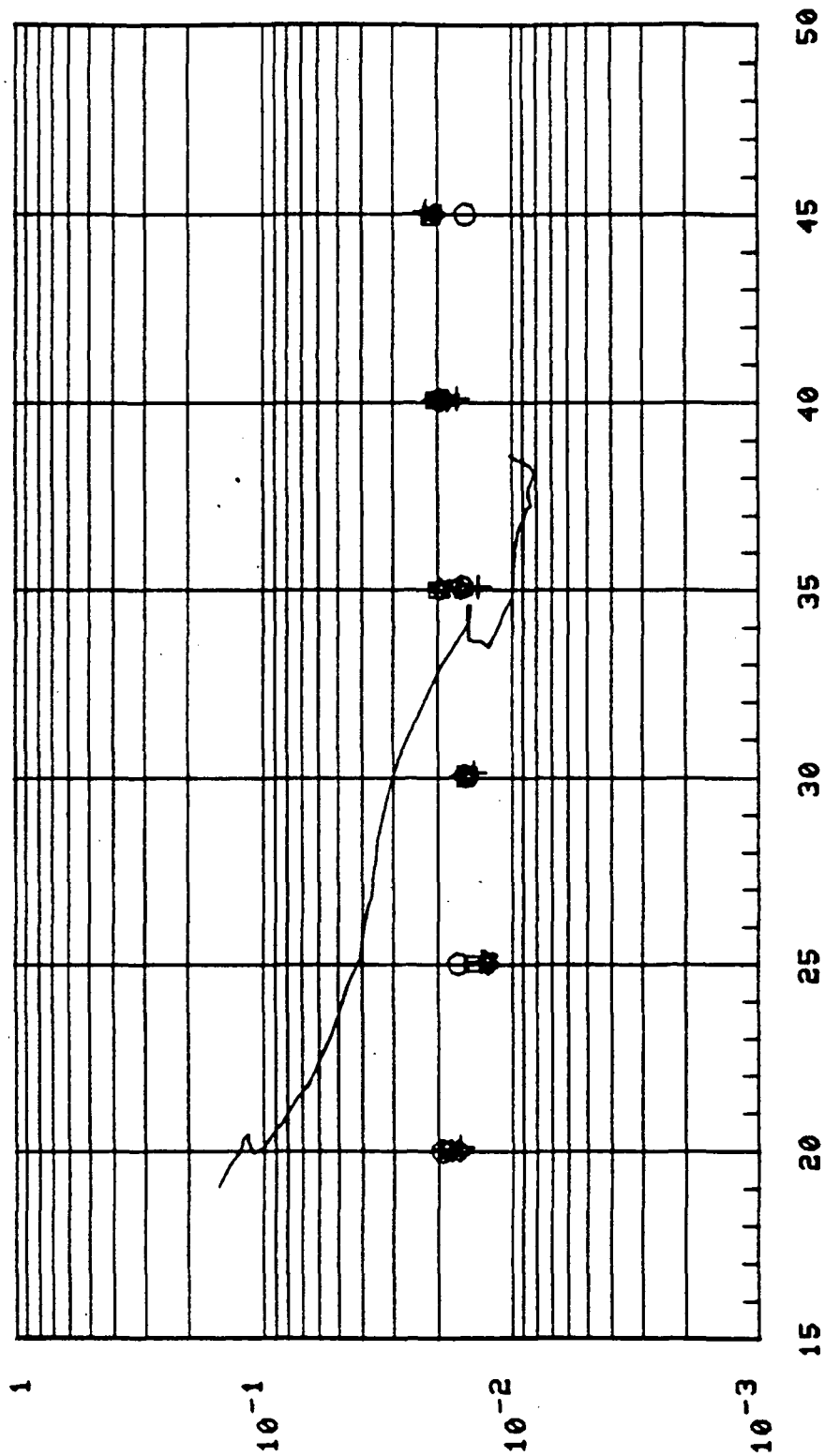
06/19/84

# STS-1 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

U07T9813A/H-REF 1065-1460 SEC

0H39 0.0175 SCALE RE - 0.5 E06  
 0H39 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H39 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

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U07T9813A/H-REF

06/18/84  
 BASE TIME - 09049744.000 SEC.

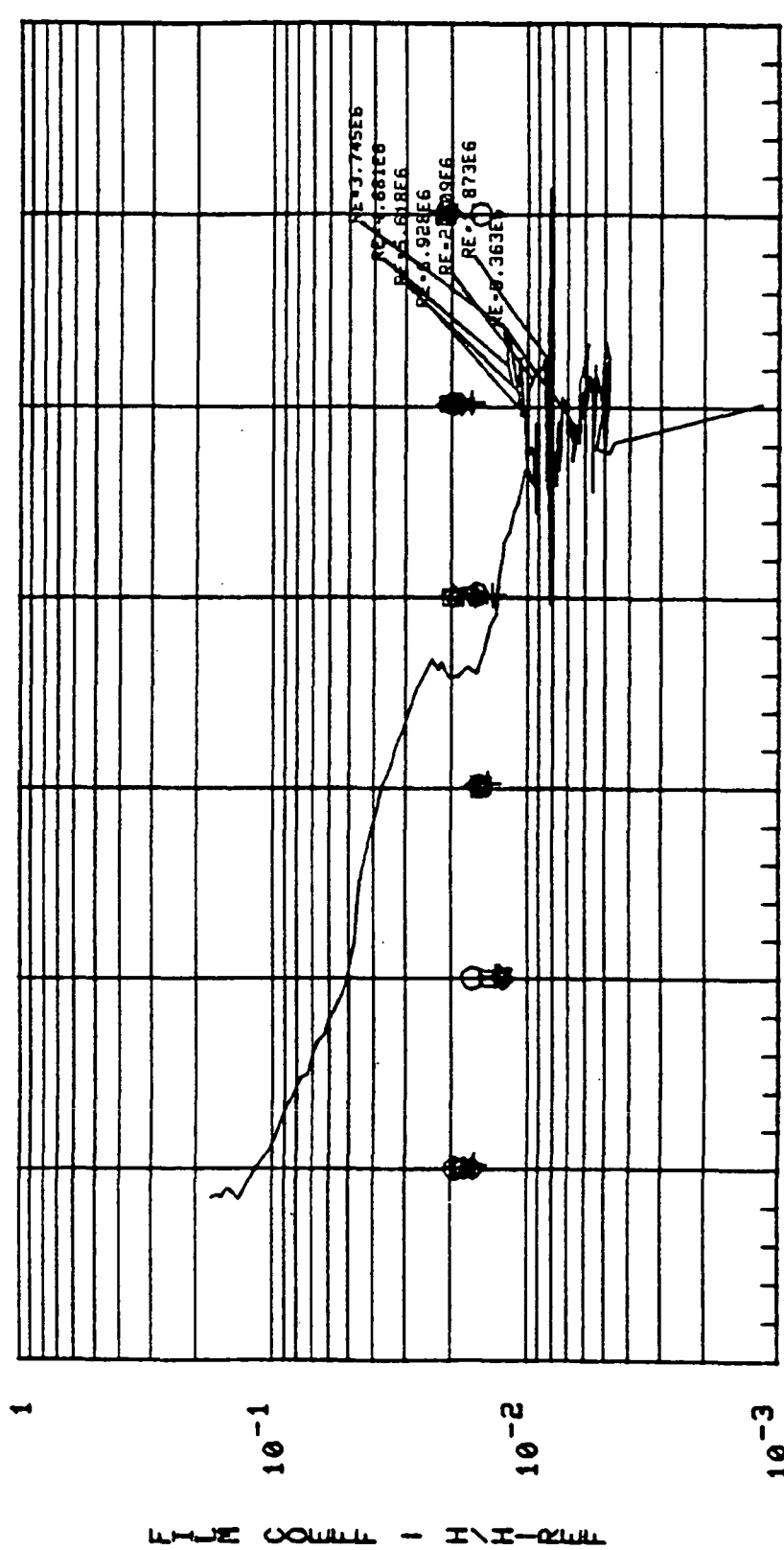
ANGLE-OF-ATTACK - DEG

# STS-2 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

U07T9813A/H-REF 200-1480 SEC

OH39 0.0175 SCALE RE - 0.5 E06  
 OH39 0.0175 SCALE RE - 1.0 E06  
 OH39 0.0175 SCALE RE - 1.5 E06  
 OH39 0.0175 SCALE RE - 2.0 E06  
 OH39 0.0175 SCALE RE - 2.5 E06  
 OH39 0.0175 SCALE RE - 3.0 E06  
 OH39 0.0175 SCALE RE - 3.7 E06

○ □ × △ ★ +



ANGLE-OF-ATTACK - DEG  
 BASE TIME - 87550336.000 SEC.

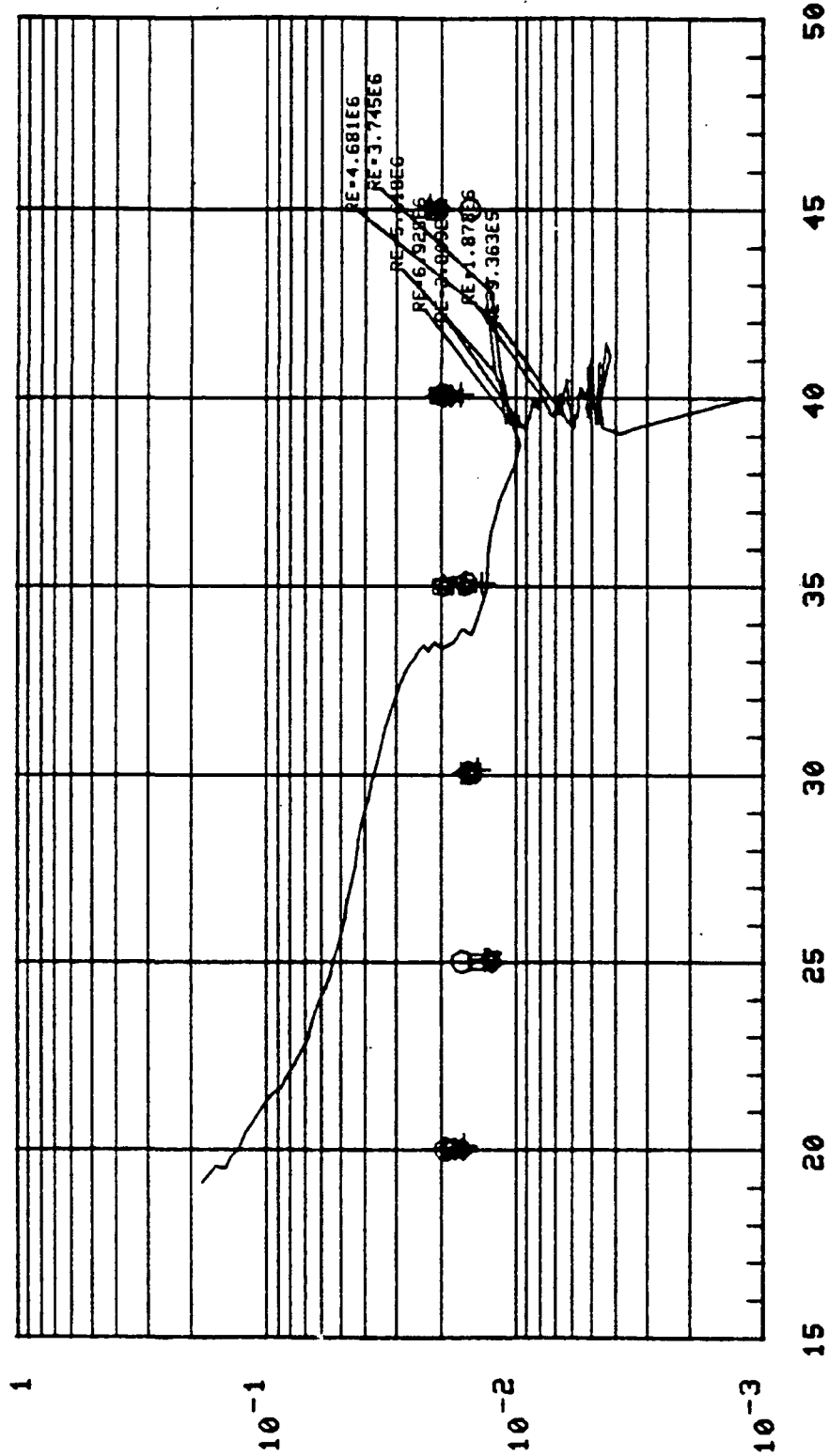
06/18/84

# STS-3 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

U07T9813A/H-REF 200-1380 SEC

0H39 0.0175 SCALE RE - 0.5 E06  
 0H39 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H39 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

□  
 ◇  
 △  
 +



FLIGHT COMPARIS - H/H-REF

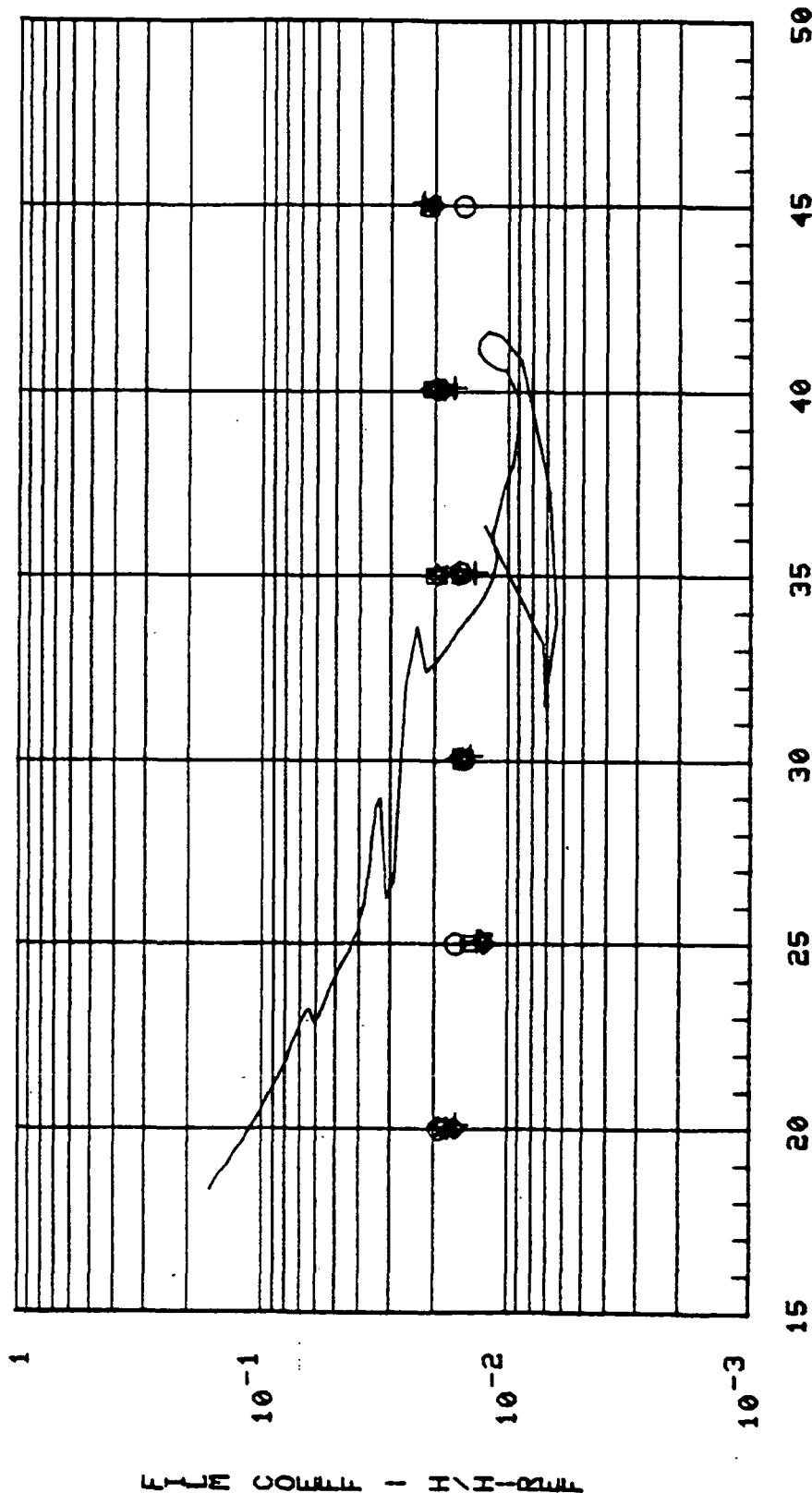
ANGLE-OF-ATTACK - DEG  
 BASE TIME - 07745684.000 SEC.  
 06/18/84

# STS-4 (107 FT LENGTH CL X/L-0.202) FLIGHT PARAMETER COMPARIS

U07T9813A/H-REF 985-1300 SEC

0H39 0.0175 SCALE RE - 0.5 E06  
 0H33 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H33 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

○ □ × ◇ △ +



06/18/84  
 BASE TIME - 16040423.000 SEC.

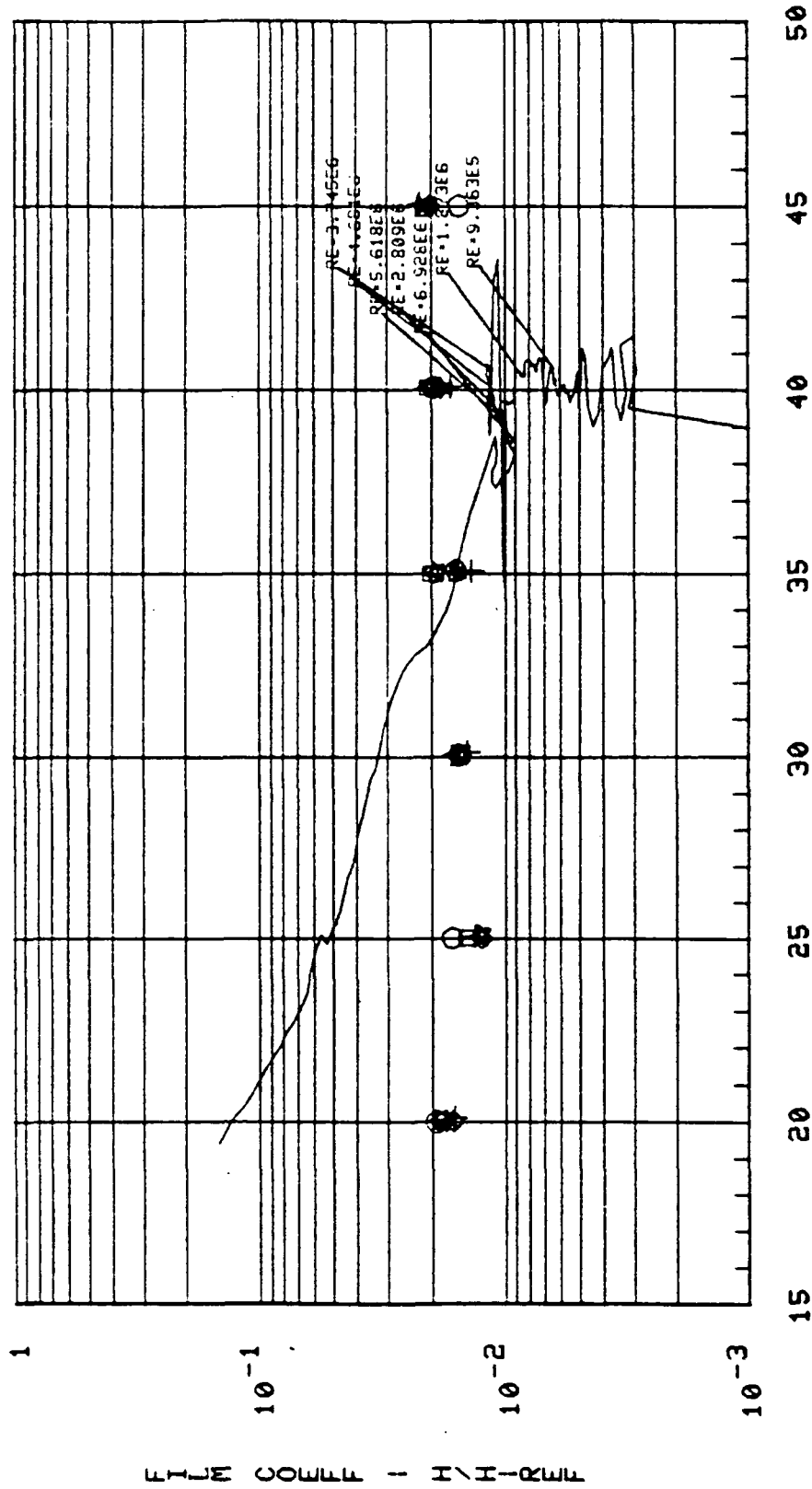


# STS-5 (107 FT LENGTH CL $X/L=0.202$ ) FLIGHT PARAMETER COMPARIS

OH39 0.0175 SCALE RE = 0.5 E06  
 OH39 0.0175 SCALE RE = 1.0 E06  
 OH39 0.0175 SCALE RE = 1.5 E06  
 OH39 0.0175 SCALE RE = 2.0 E06  
 OH39 0.0175 SCALE RE = 2.5 E06  
 OH39 0.0175 SCALE RE = 3.0 E06  
 OH39 0.0175 SCALE RE = 3.7 E06

037T9813M/H-REF 150-1350 SEC

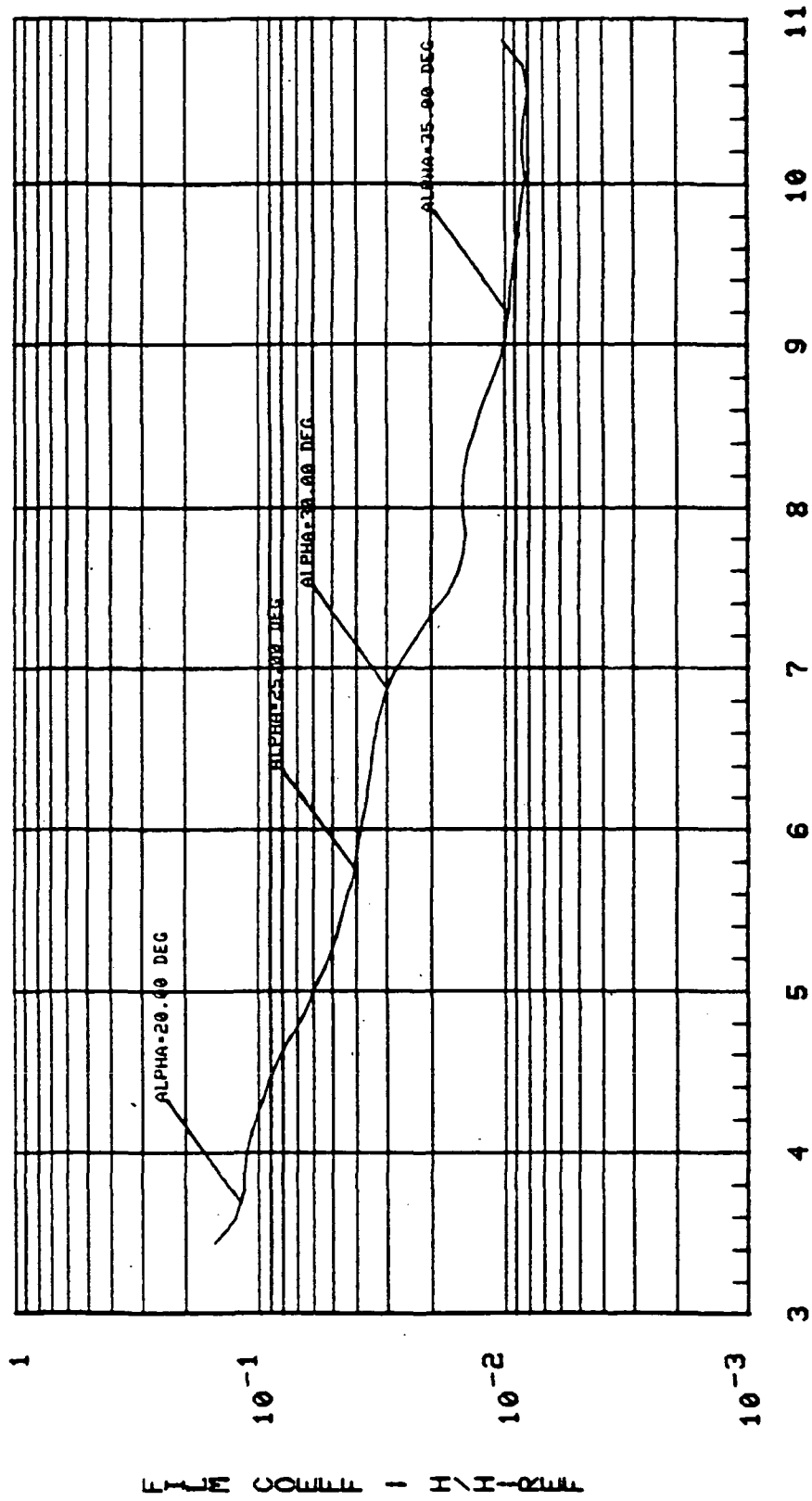
○  
 □  
 ×  
 △  
 ★  
 +



06/19/84  
 BASE TIME = 27698591.000 SEC.

# STS-1 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

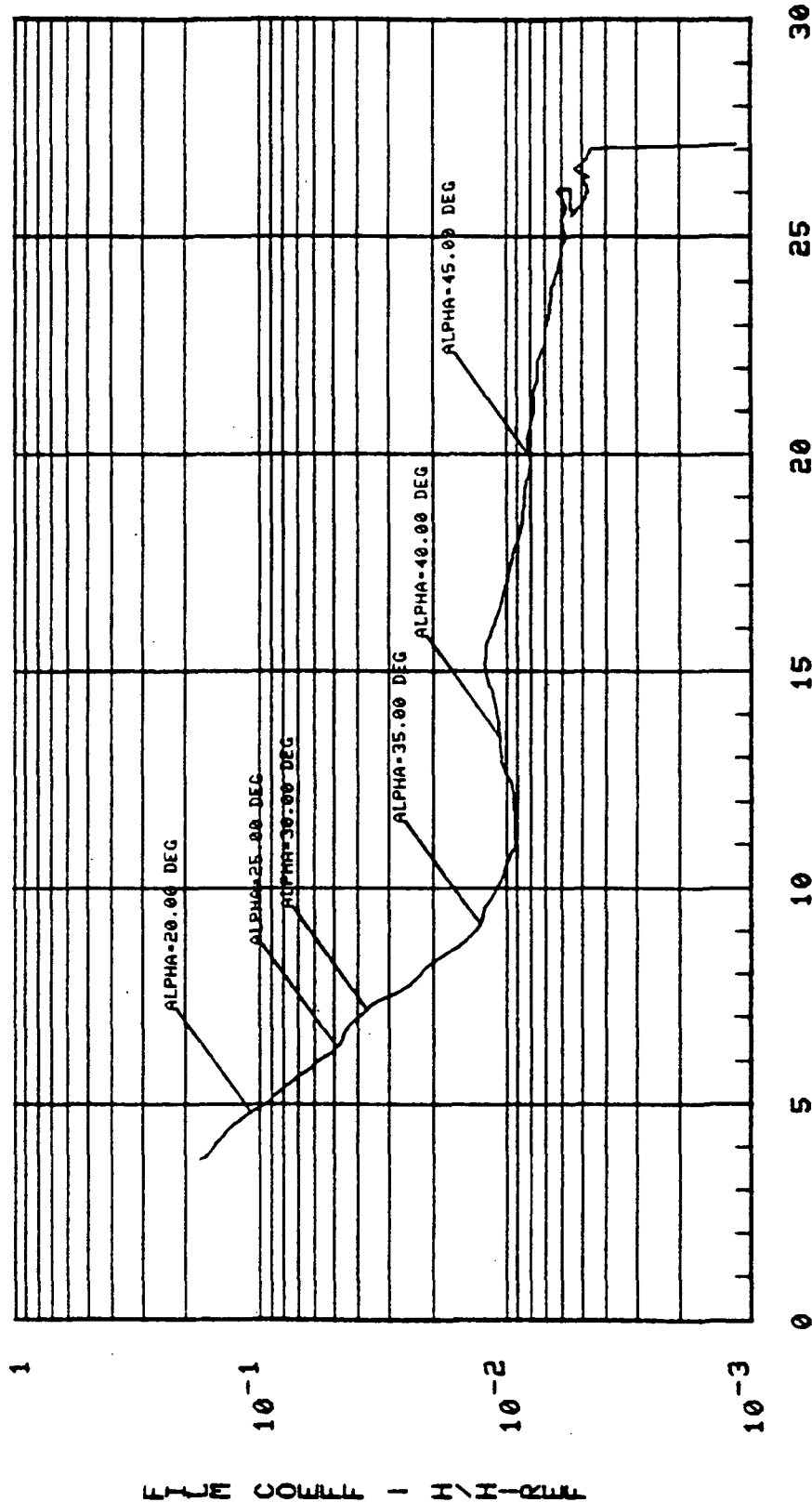
U07T9813M/H-REF 1065-1460 SEC



MACH NUMBER  
BASE TIME - 00049744.000 SEC.  
06/18/84

# STS-2 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

U07T9813A/H-REF 200-1480 SEC

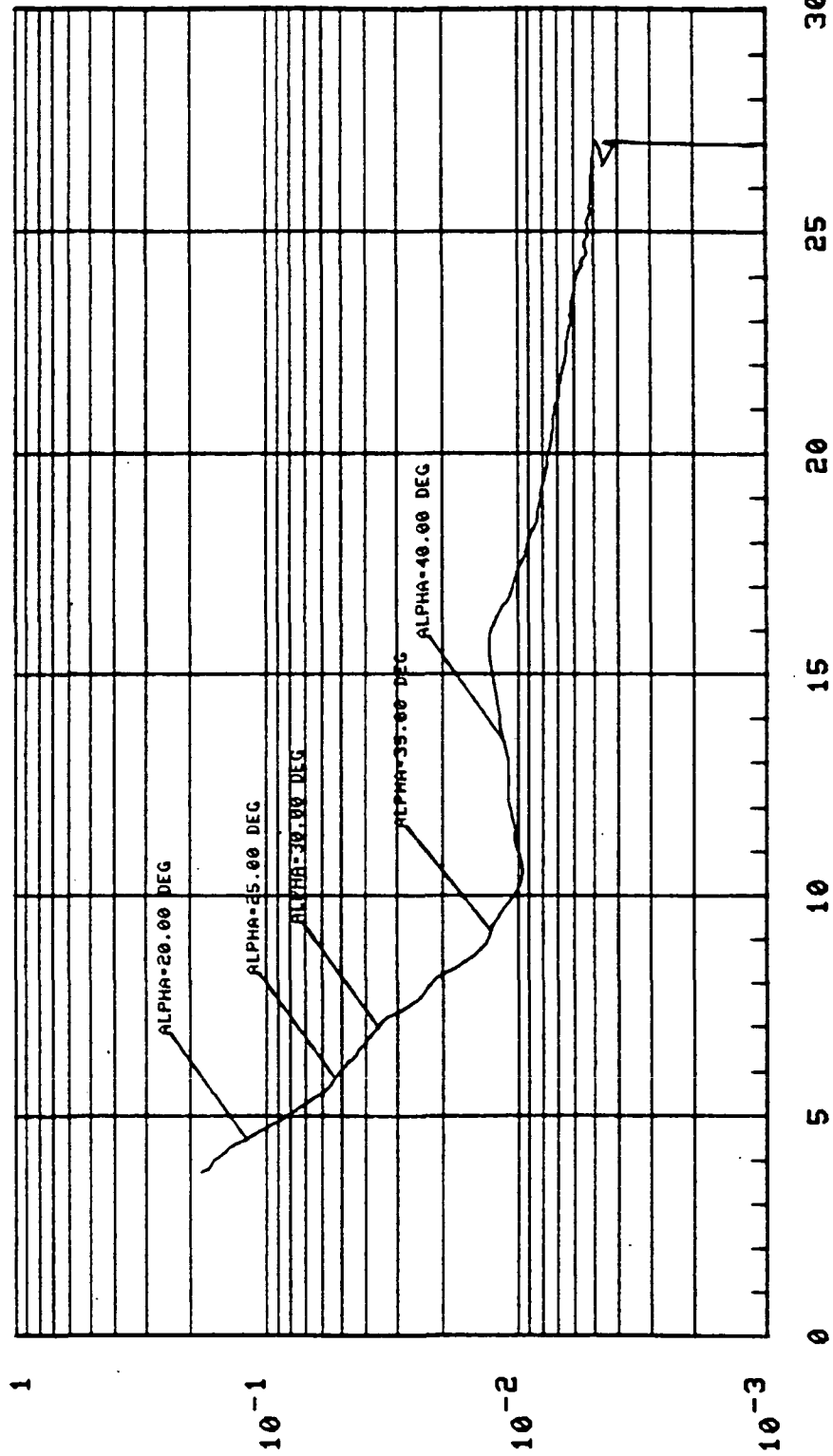


MACH NUMBER

06/18/84  
BASE TIME - 2750236.000 SEC.

# STS-3 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

U0758134/H-REF 200-1320 SEC

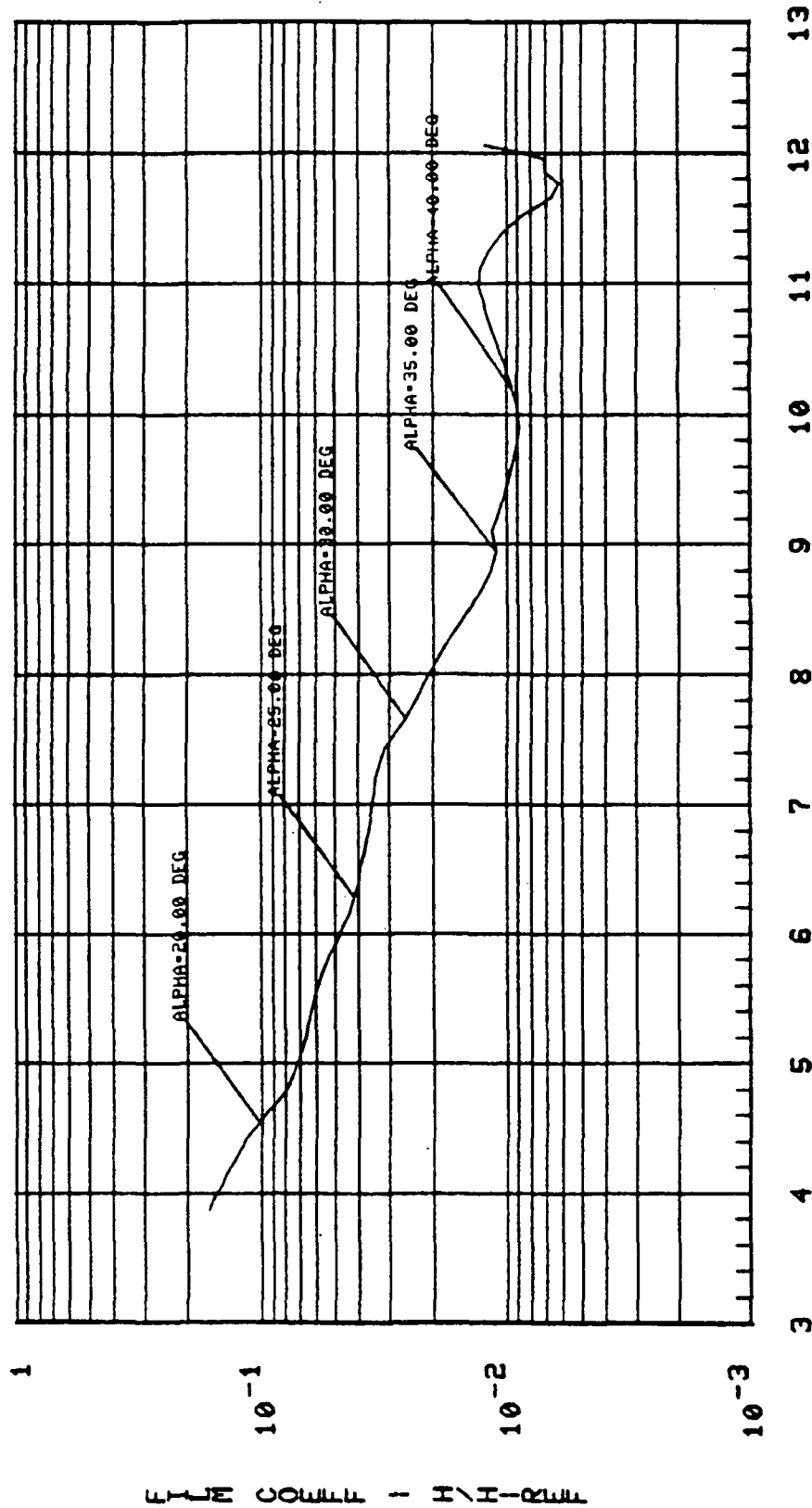


06/18/84  
BASE TIME - 07745684.000 SEC.

MACH NUMBER

# STS-4 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

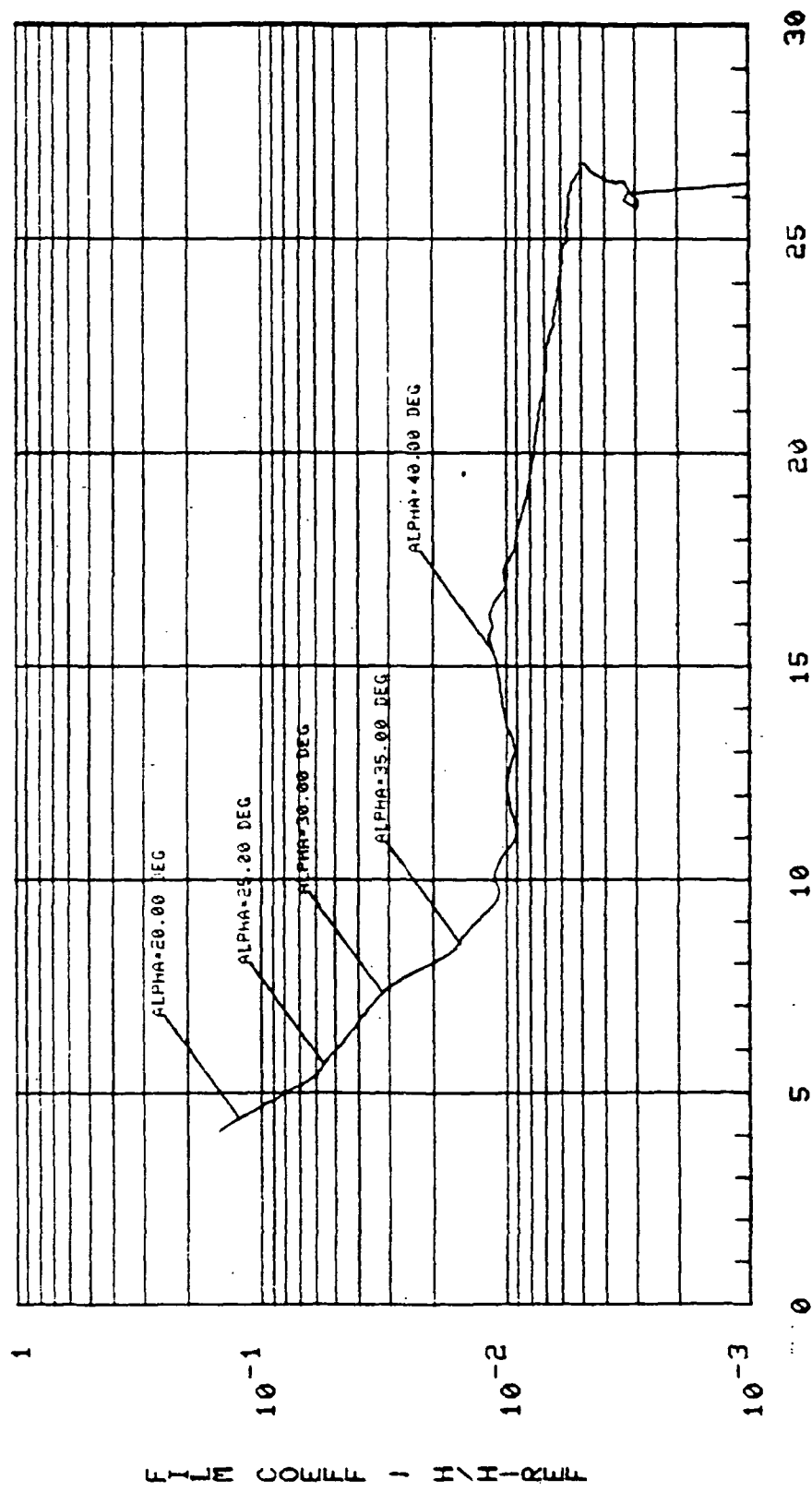
U07T92134/H-REF 965-1300 SEC



06/18/84  
BASE TIME - 1604023.000 SEC.

# STS-5 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

OC7T5213m-H-PEF 150-1350 SEC



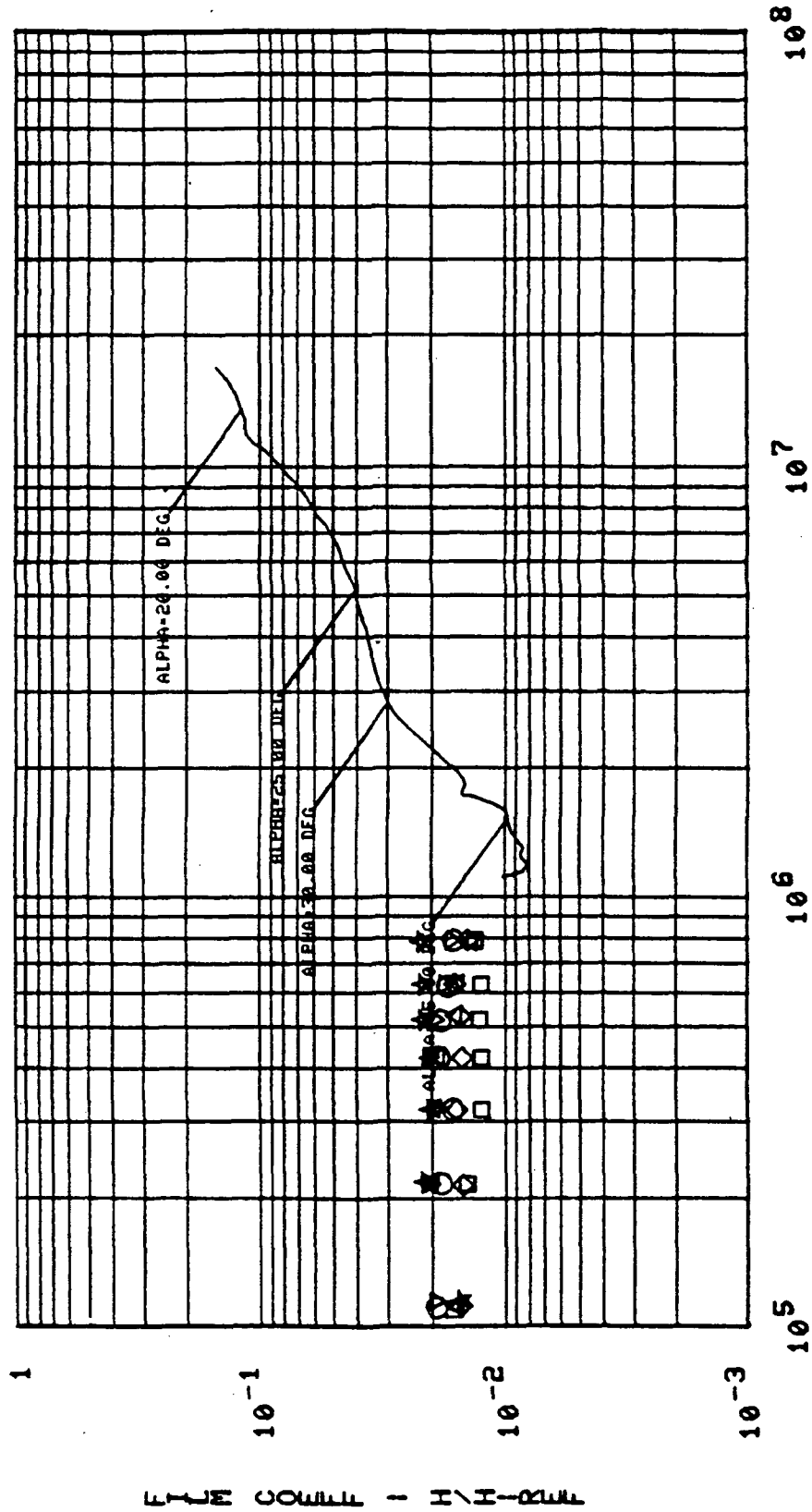
MACH NUMBER  
06/19/84  
BASE TIME - 27698501.000 SEC.

# STS-1 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

OH39 ALPHA - 20 DEGREES  
 OH39 ALPHA - 25 DEGREES  
 OH39 ALPHA - 30 DEGREES  
 OH39 ALPHA - 35 DEGREES  
 OH39 ALPHA - 40 DEGREES  
 OH39 ALPHA - 45 DEGREES

U07T9813A/H-REF 1065-1460 SEC

○ □ × △



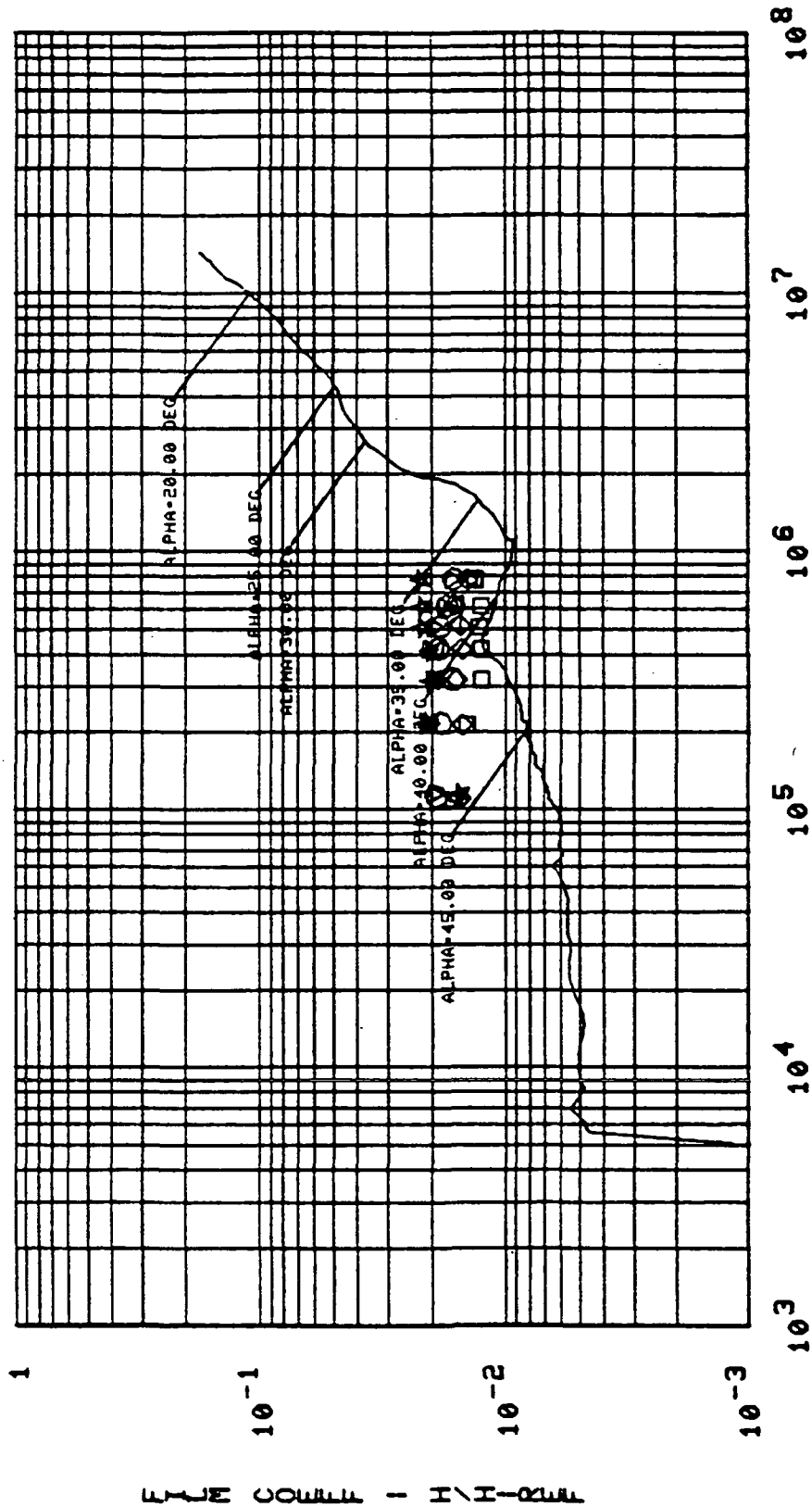
REYNOLDS NUMBER (NS) BASE TIME - 00040744.000 SEC. 06/18/84

# STS-2 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

U07T98134/H-REF 200-1480 SEC

- OH39 ALPHA - 20 DEGREES
- OH39 ALPHA - 25 DEGREES
- OH39 ALPHA - 30 DEGREES
- OH39 ALPHA - 35 DEGREES
- OH39 ALPHA - 40 DEGREES
- OH39 ALPHA - 45 DEGREES

□ ◇ ×



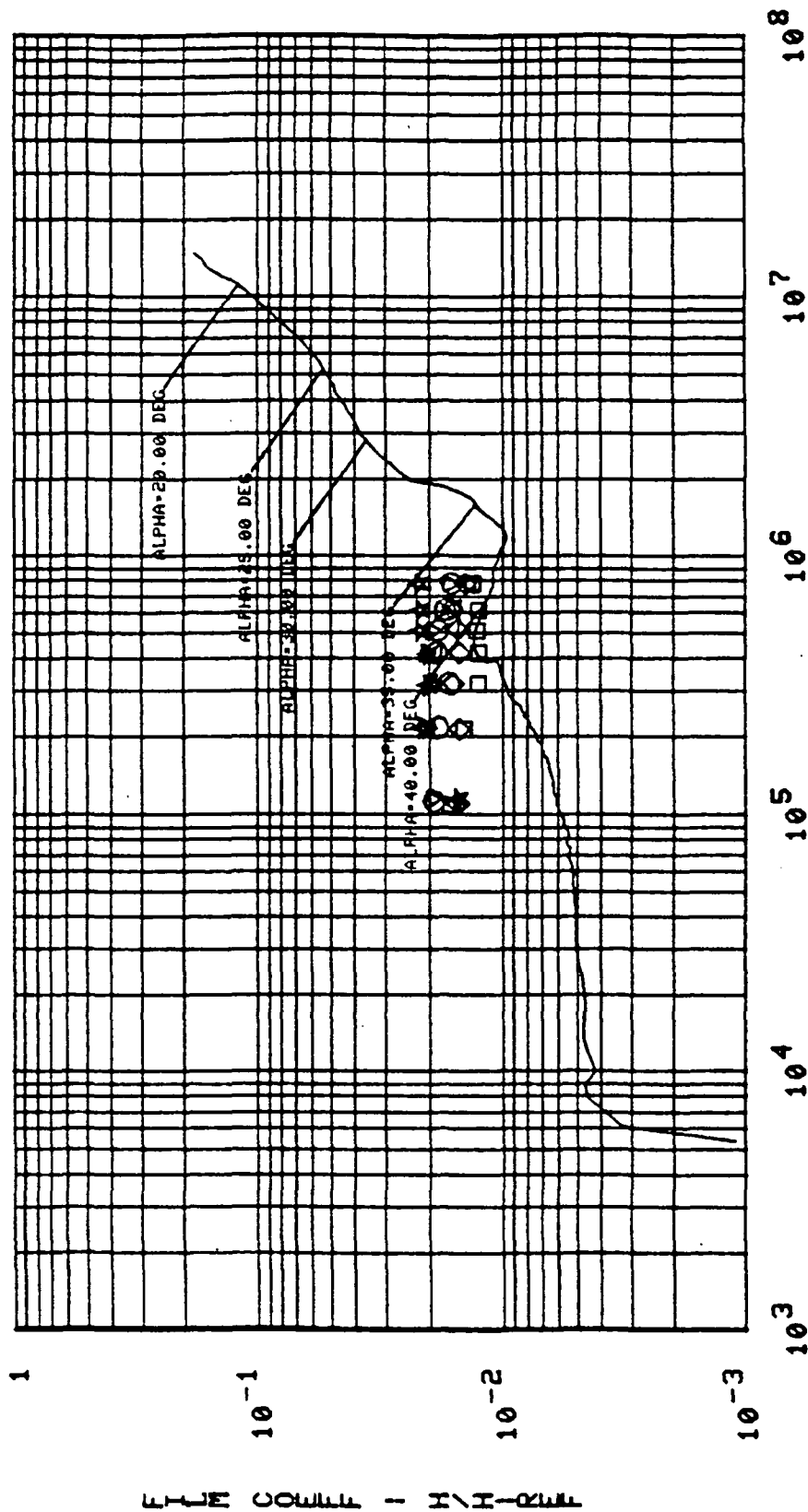
REYNOLDS NUMBER (NS) 06/18/84  
BASE TIME - 27550236.000 SEC.



# STS-3 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

O H39 ALPHA - 20 DEGREES  
 □ H39 ALPHA - 25 DEGREES  
 X H39 ALPHA - 30 DEGREES  
 Δ H39 ALPHA - 35 DEGREES  
 \* H39 ALPHA - 40 DEGREES  
 \* H39 ALPHA - 45 DEGREES

U07192134/H-REF 200-1380 SEC



06/18/84  
BASE TIME - 07745684.000 SEC.

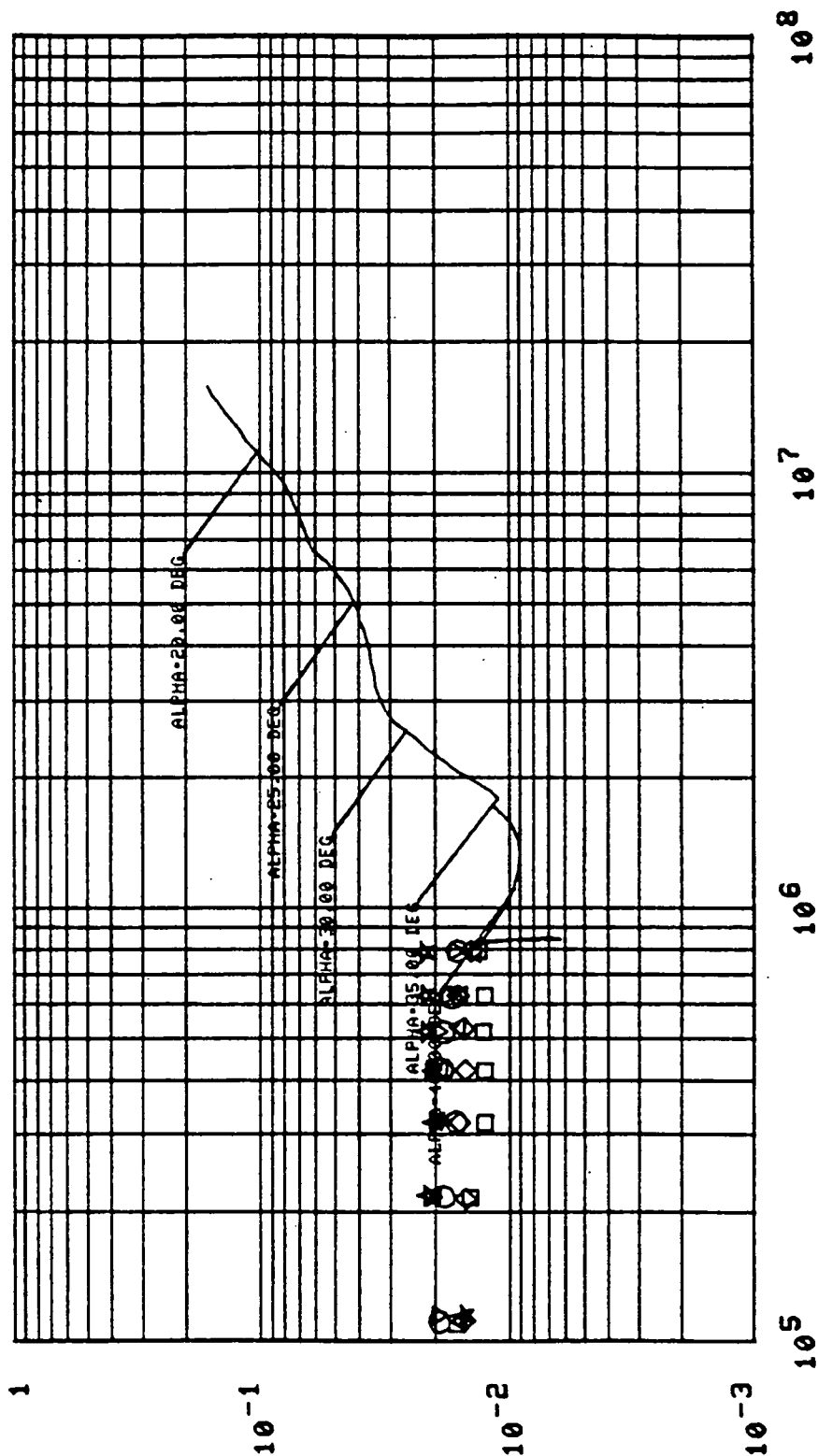
REYNOLDS NUMBER (NS)

# STS-4 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

U07T9813A/H-FEF 965-1300 SEC

OH39 ALPHA - 20 DEGREES  
 OH39 ALPHA - 25 DEGREES  
 OH39 ALPHA - 30 DEGREES  
 OH39 ALPHA - 35 DEGREES  
 OH39 ALPHA - 40 DEGREES  
 OH39 ALPHA - 45 DEGREES

□ ◇ ×



LIFT COEFF - H/H-FEF

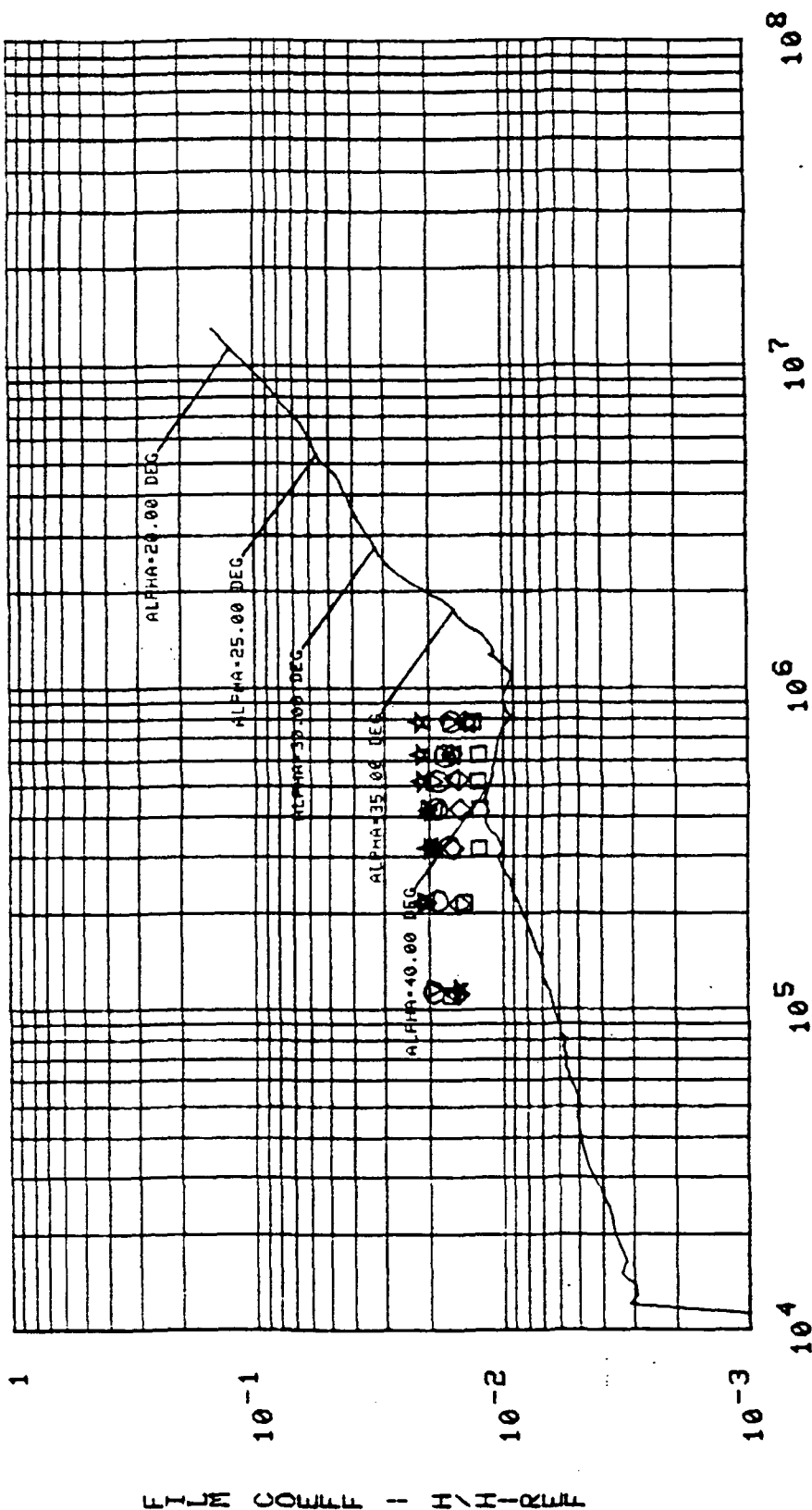
REYNOLDS NUMBER (NS) 06/18/84 BASE TIME - 1604023.000 SEC.

# STS-5 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

007T92134/H-REF 150-1350 SEC

0439 ALPHA - 20 DEGREES  
 0439 ALPHA - 25 DEGREES  
 0439 ALPHA - 30 DEGREES  
 0439 ALPHA - 35 DEGREES  
 0439 ALPHA - 40 DEGREES  
 0439 ALPHA - 45 DEGREES

○ □ ◇ △ ☆



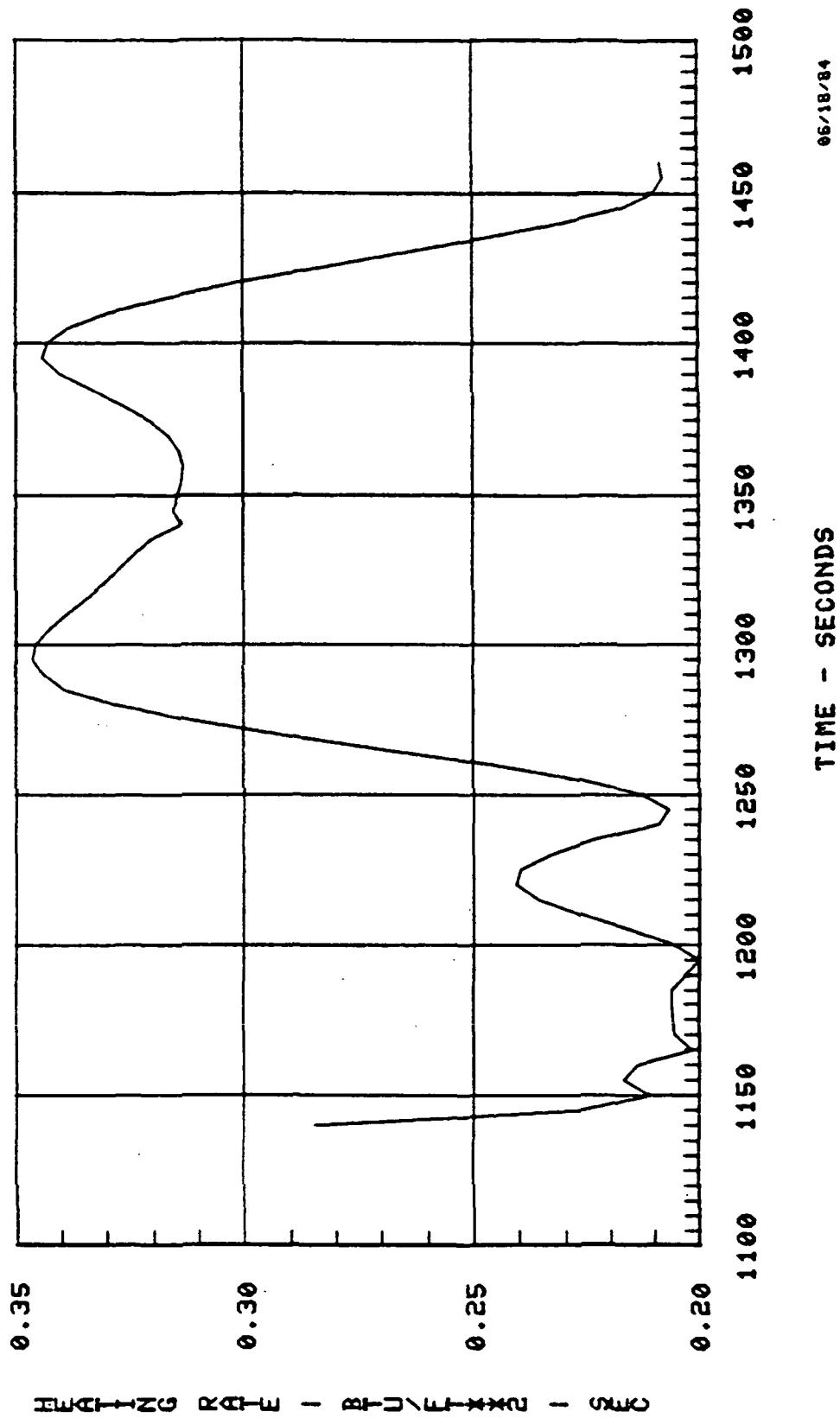
REYNOLDS NUMBER (NS)

06/19/84

BASE TIME - 27698591.000 SEC.

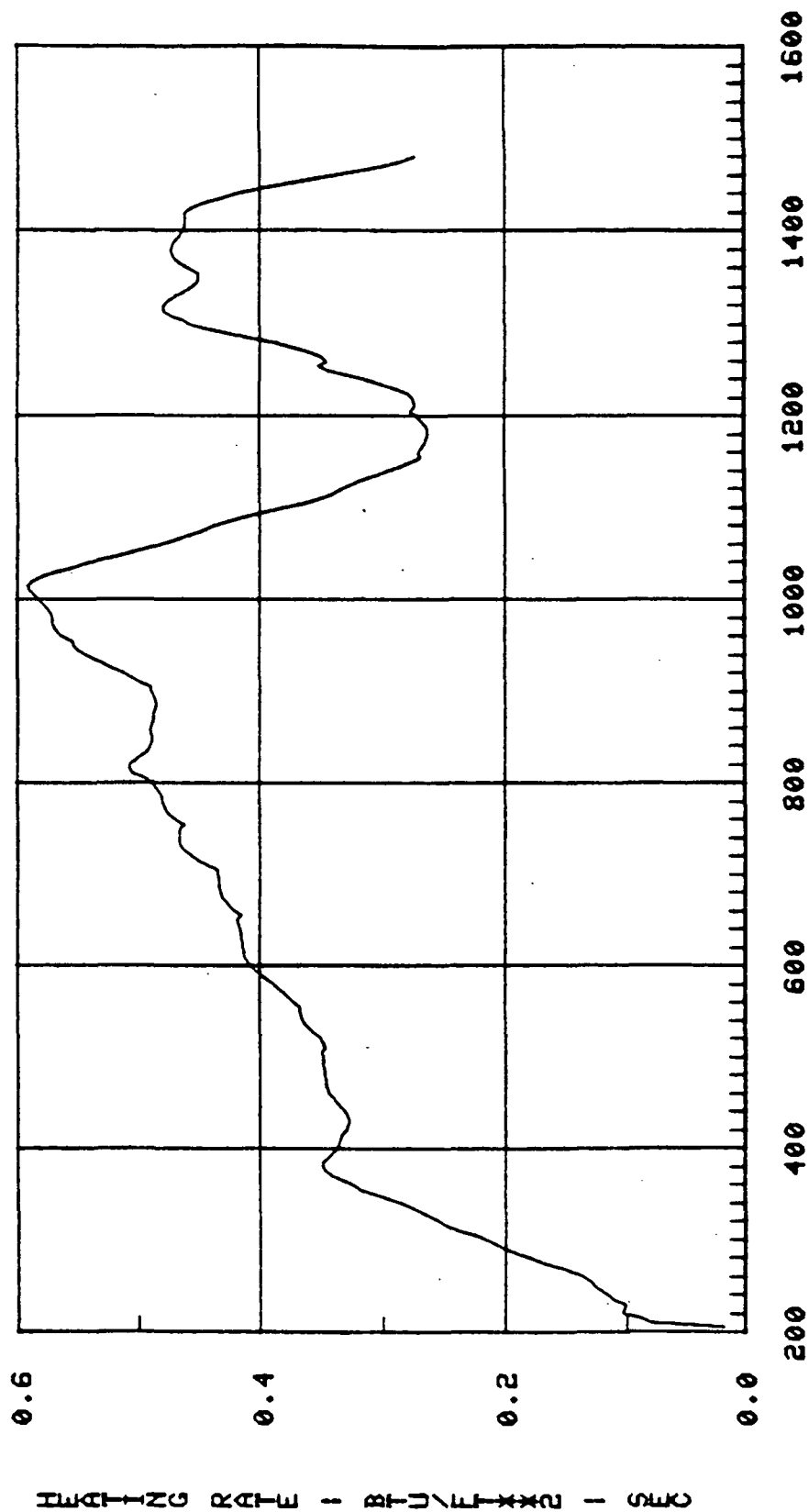
# STS-1 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

U07T9813A



# STS-2 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

U07T98134

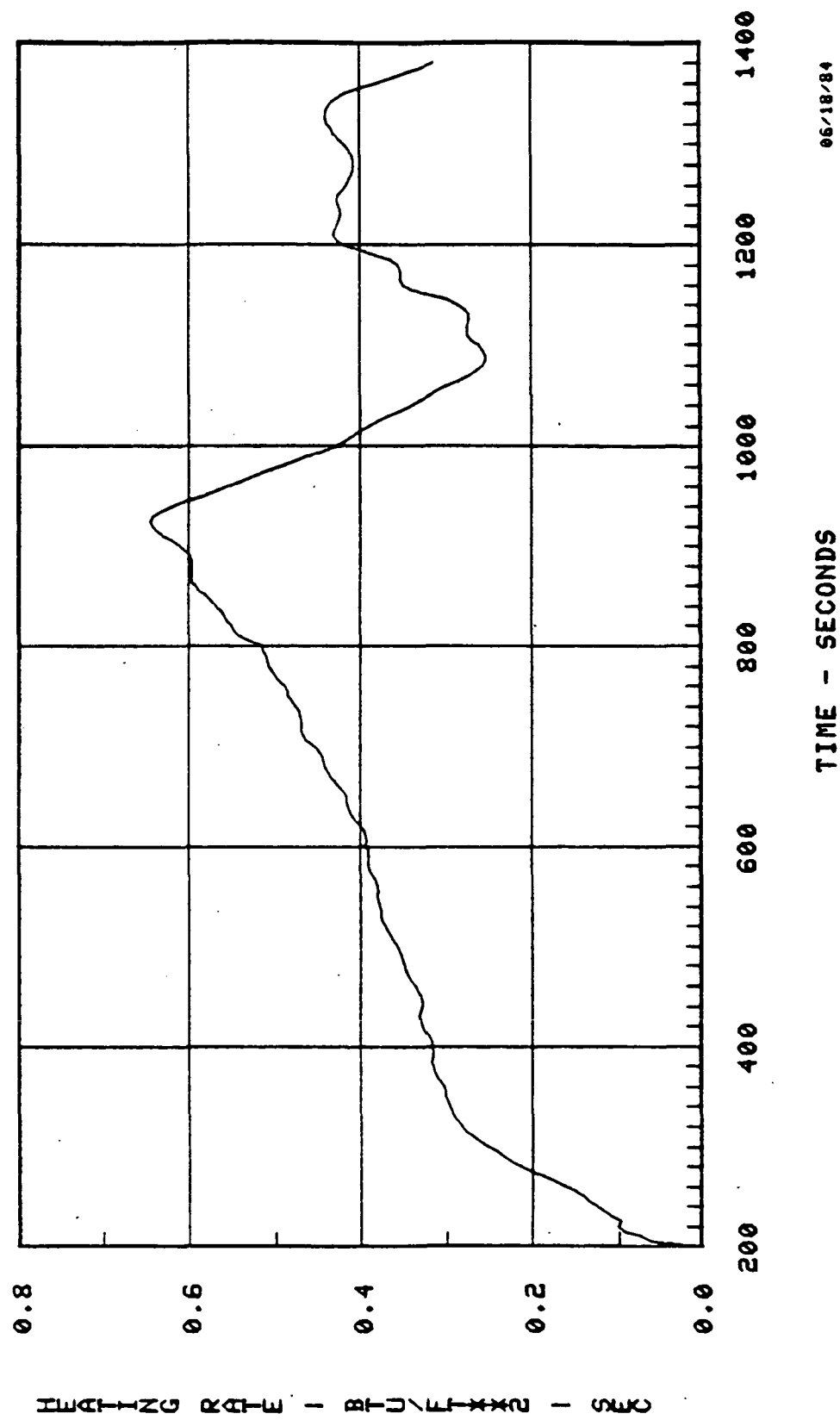


TIME - SECONDS

06/18/84

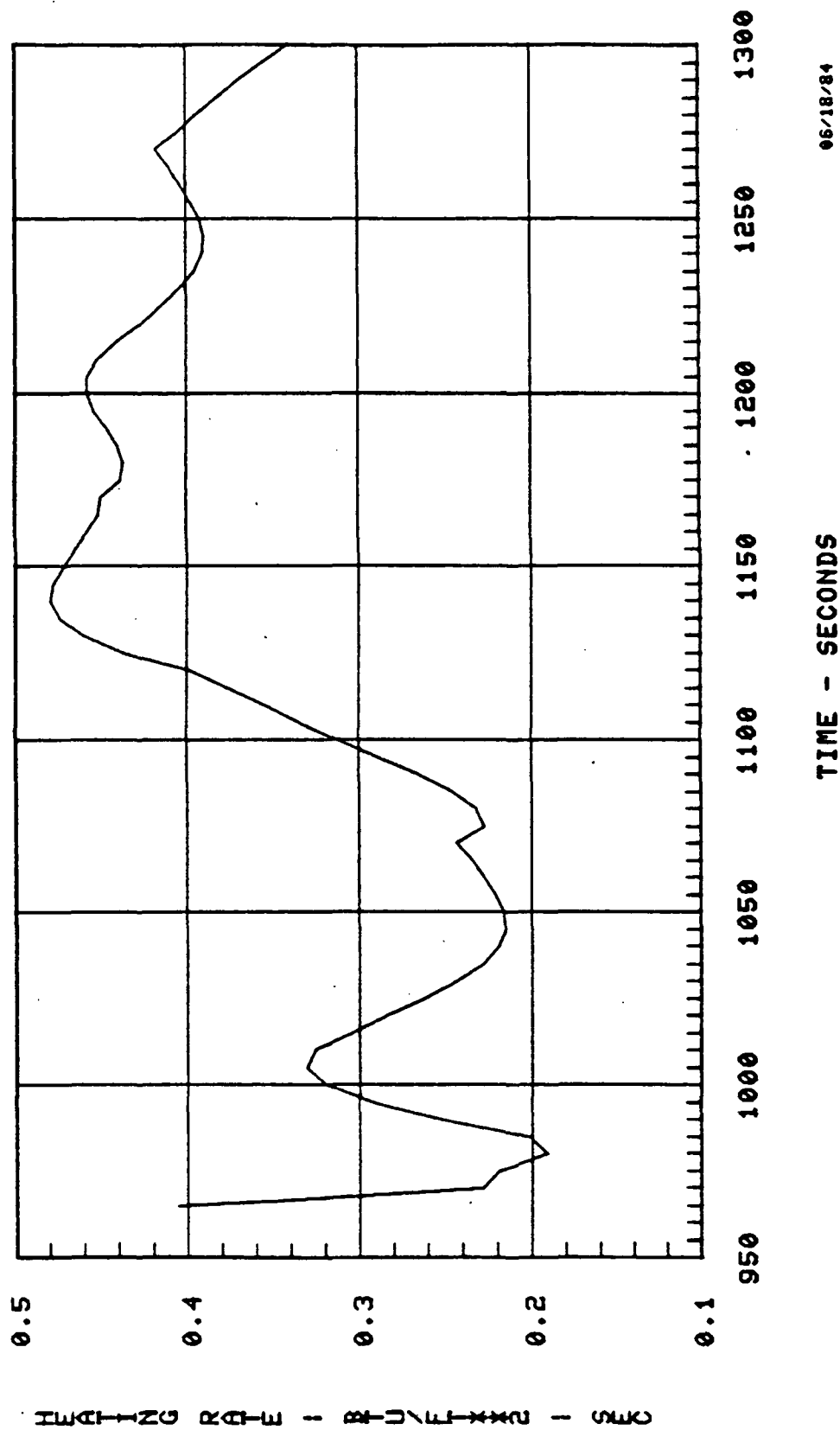
# STS-3 (107 FT LENGTH CL $X/L=0.202$ ) FLIGHT PARAMETER COMPARIS

U07T9813A



# STS-4 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

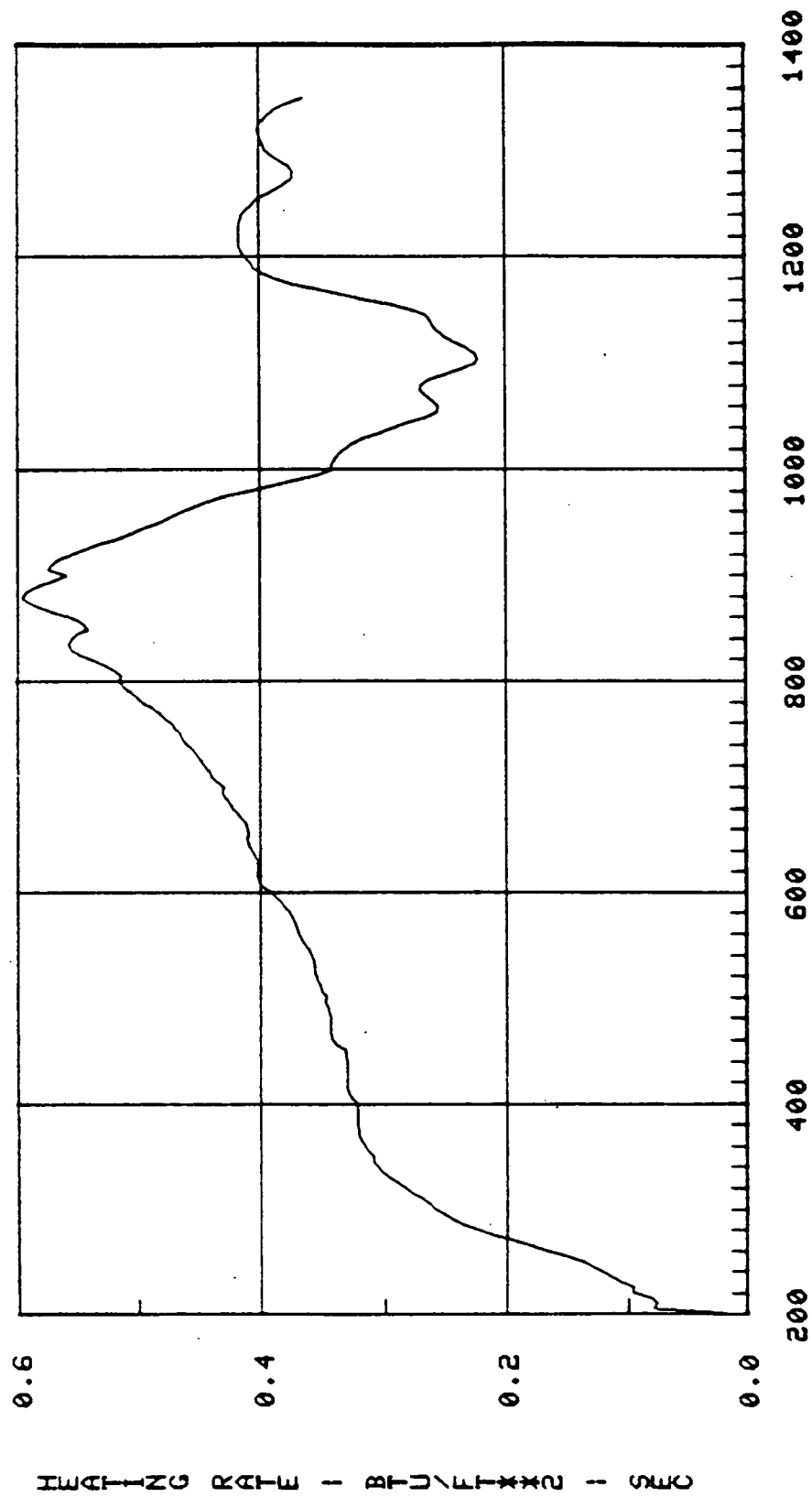
U07T9813A



06/18/84

# STS-5 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

067T98134



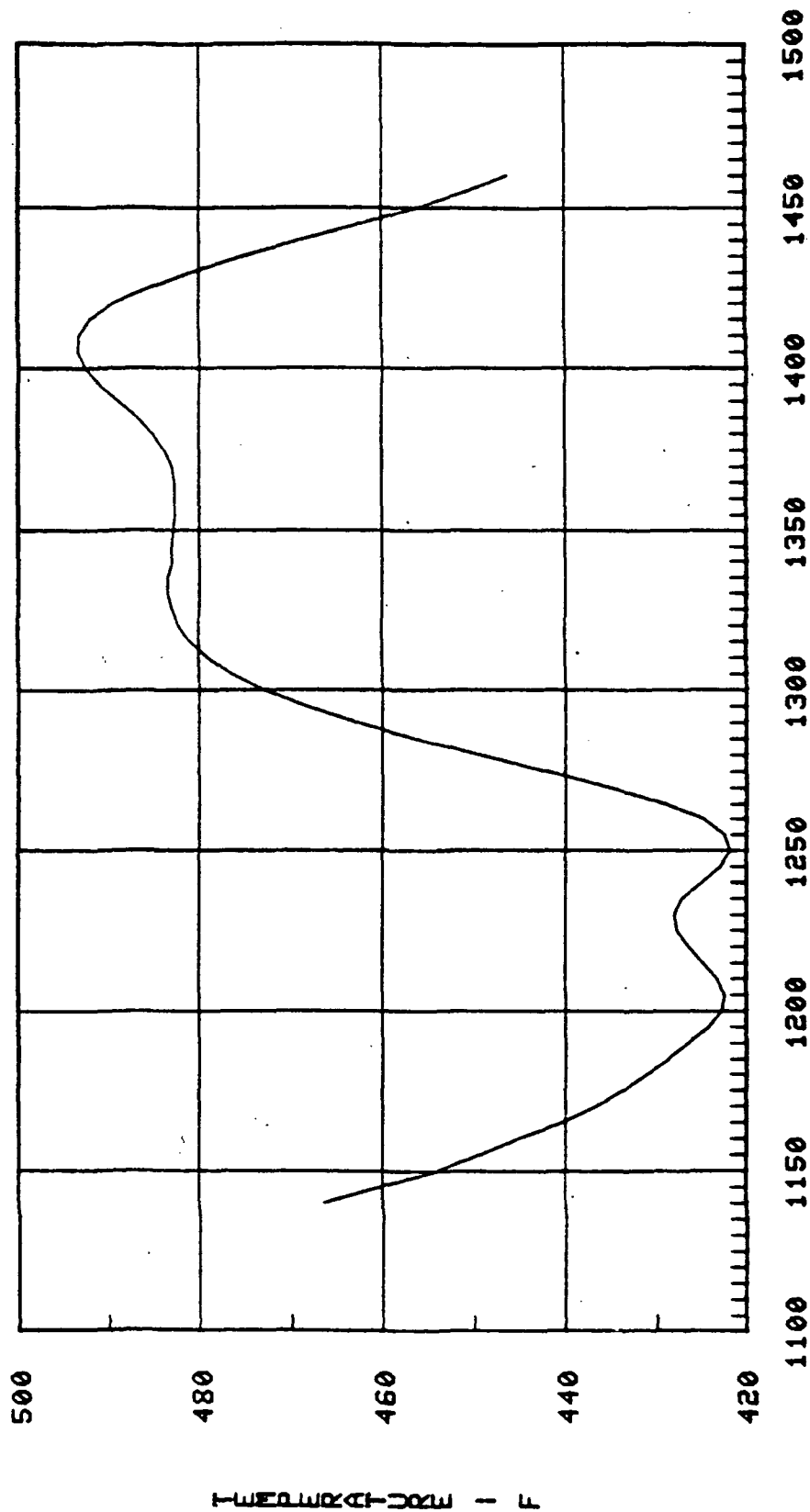
TIME - SECONDS

06/19/84



# STS-1 (107 FT LENGTH CL X/L=0.202) FLIGHT PARAMETER COMPARIS

U07T98134

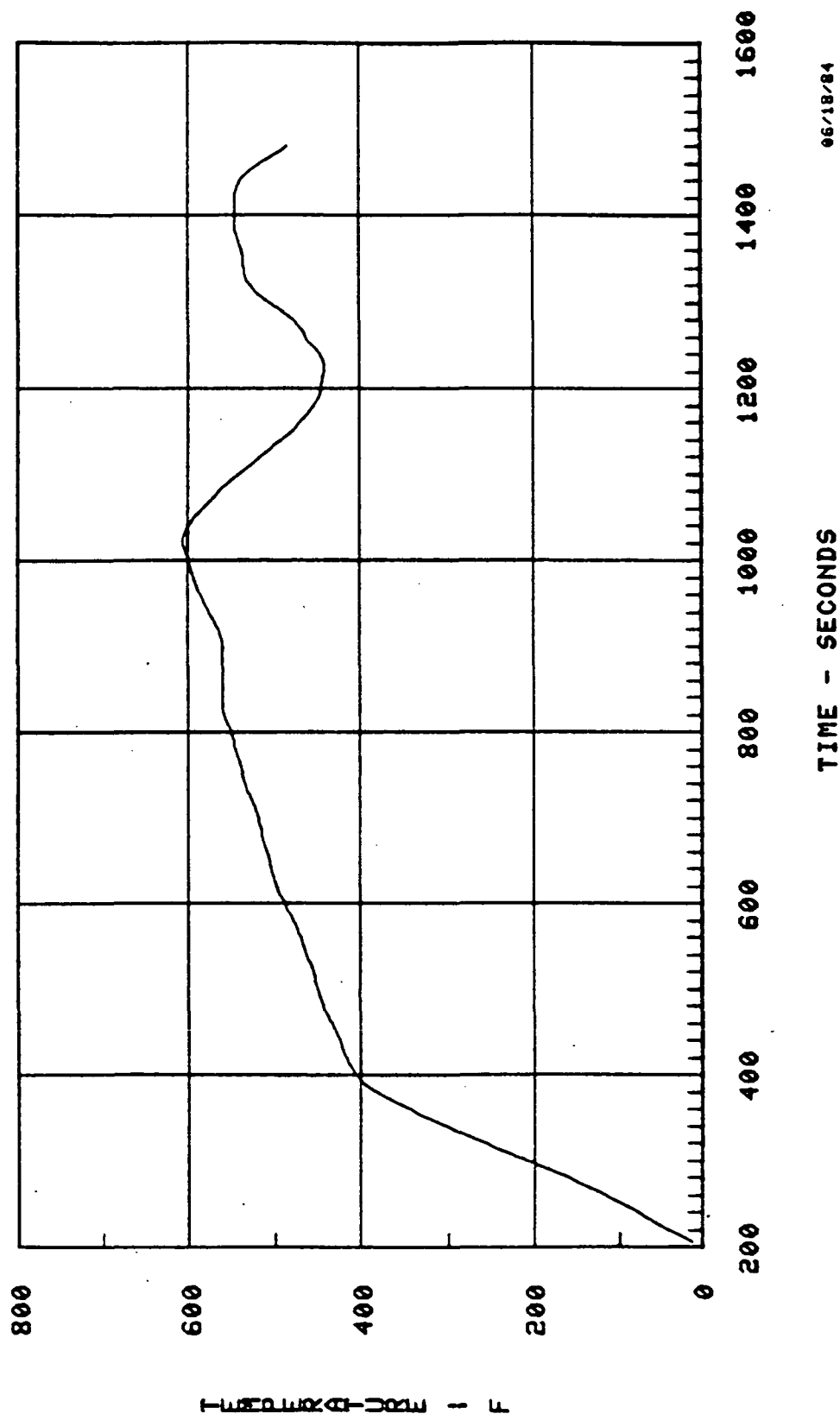


TIME - SECONDS

06/18/84

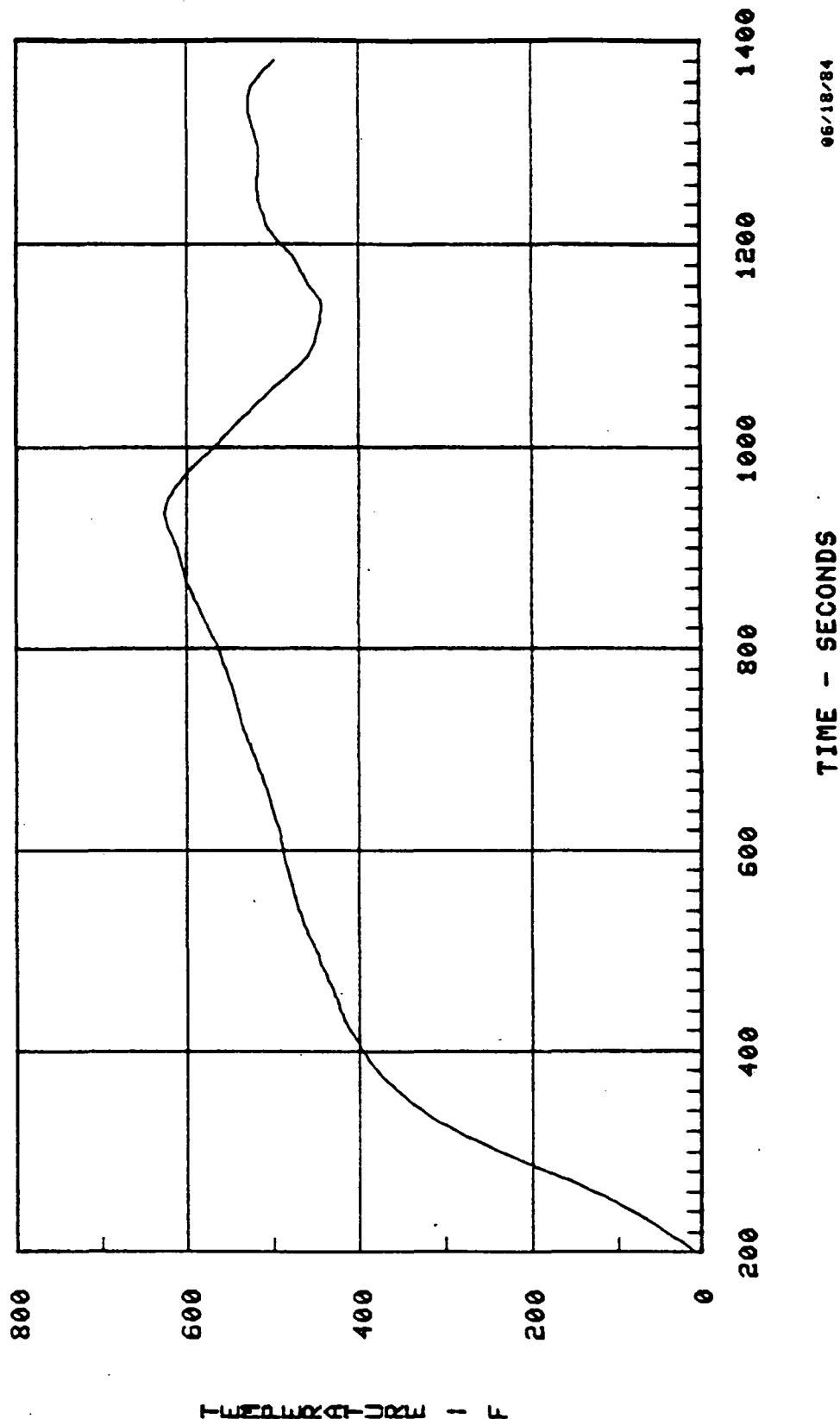
# STS-2 (107 FT LENGTH CL $X/L=0.202$ ) FLIGHT PARAMETER COMPARIS

U07T98134



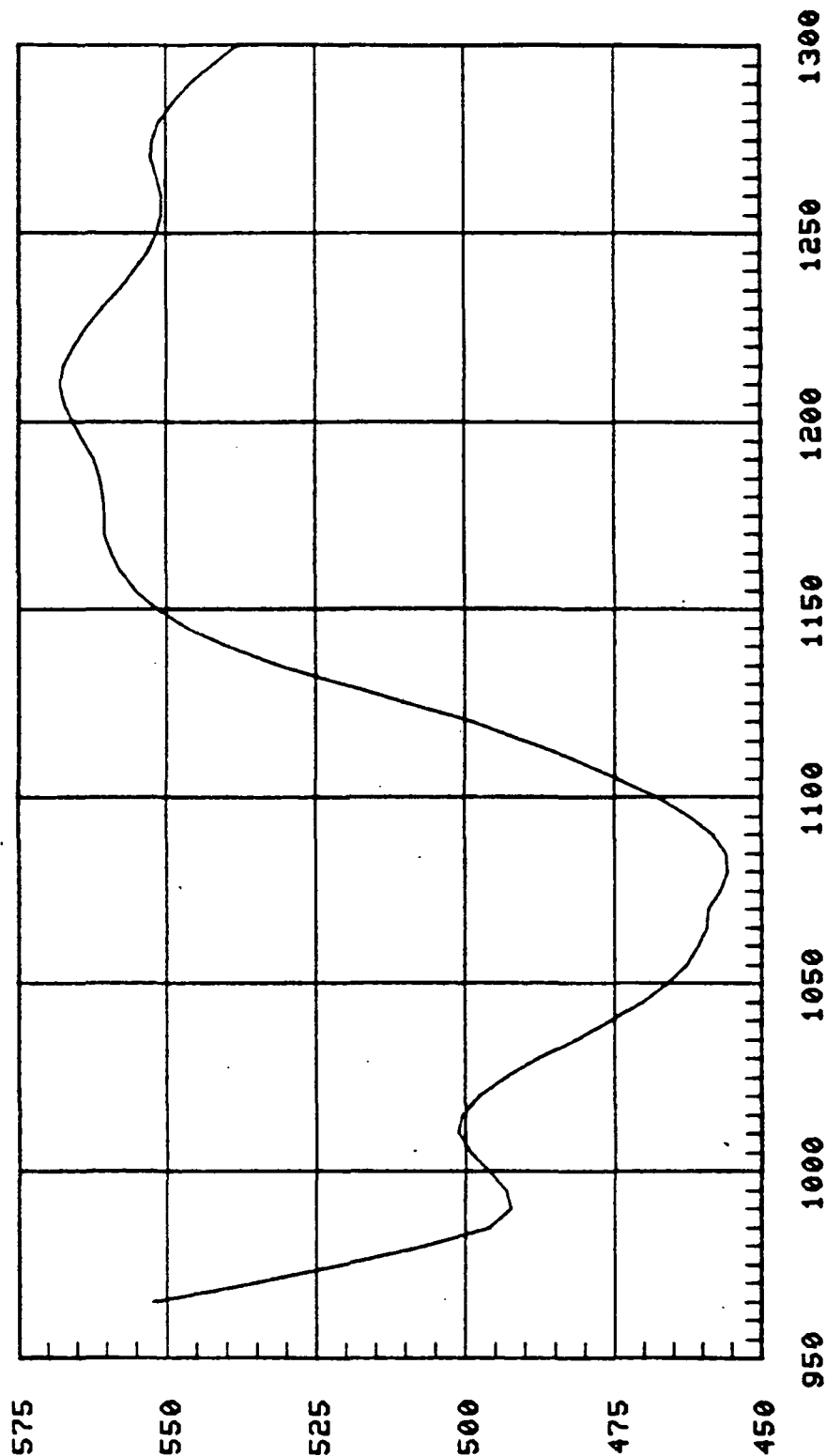
# STS-3 (107 FT LENGTH CL $X/L=0.202$ ) FLIGHT PARAMETER COMPARIS

U07T9813A



# STS-4 (107 FT LENGTH CL $X/L=0.202$ ) FLIGHT PARAMETER COMPARIS

U07T9813A

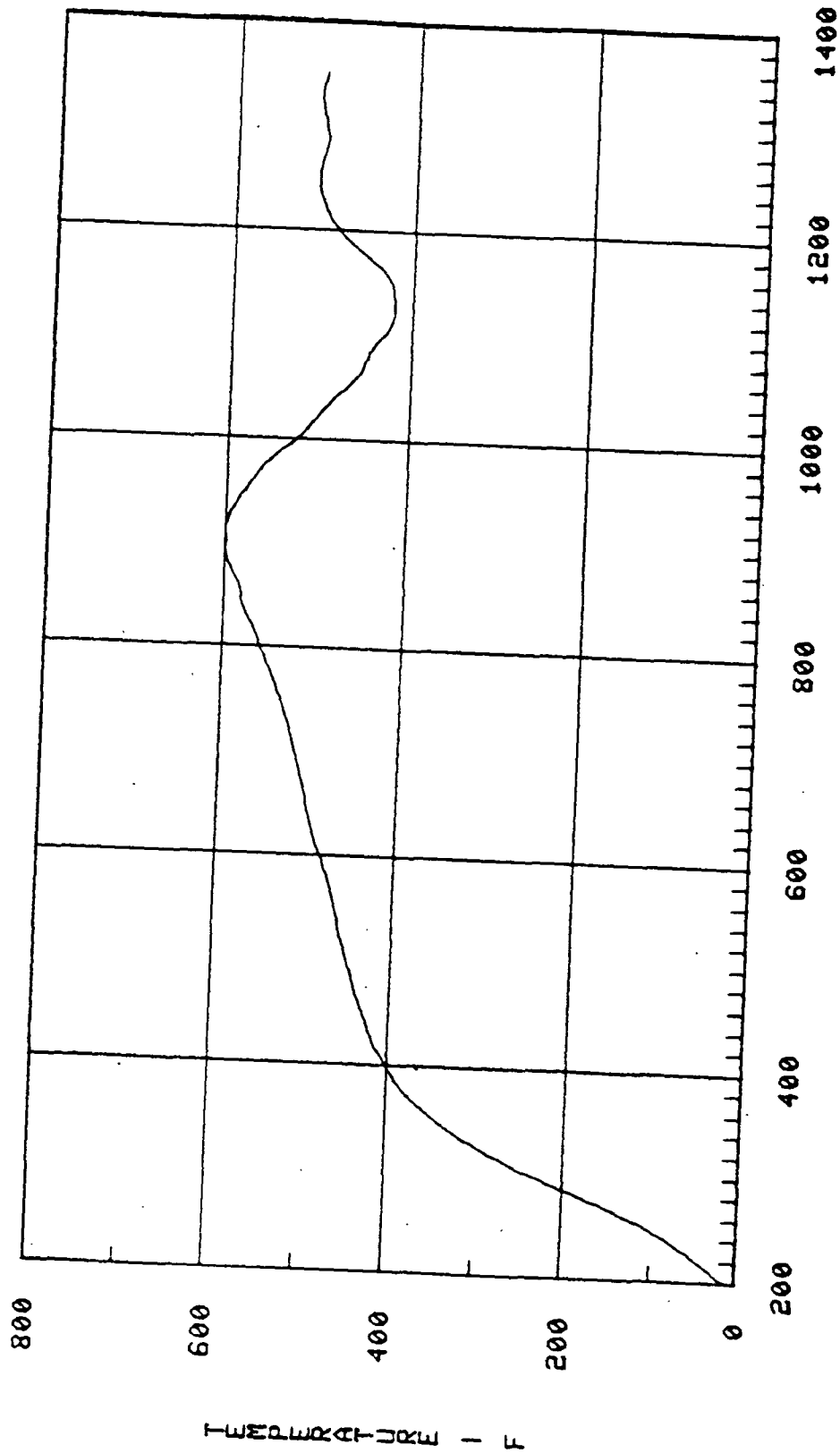


TIME - SECONDS

06/18/84

# STS-5 (107 FT LENGTH CL $X/L=0.202$ ) FLIGHT PARAMETER COMPARIS

U67T98134



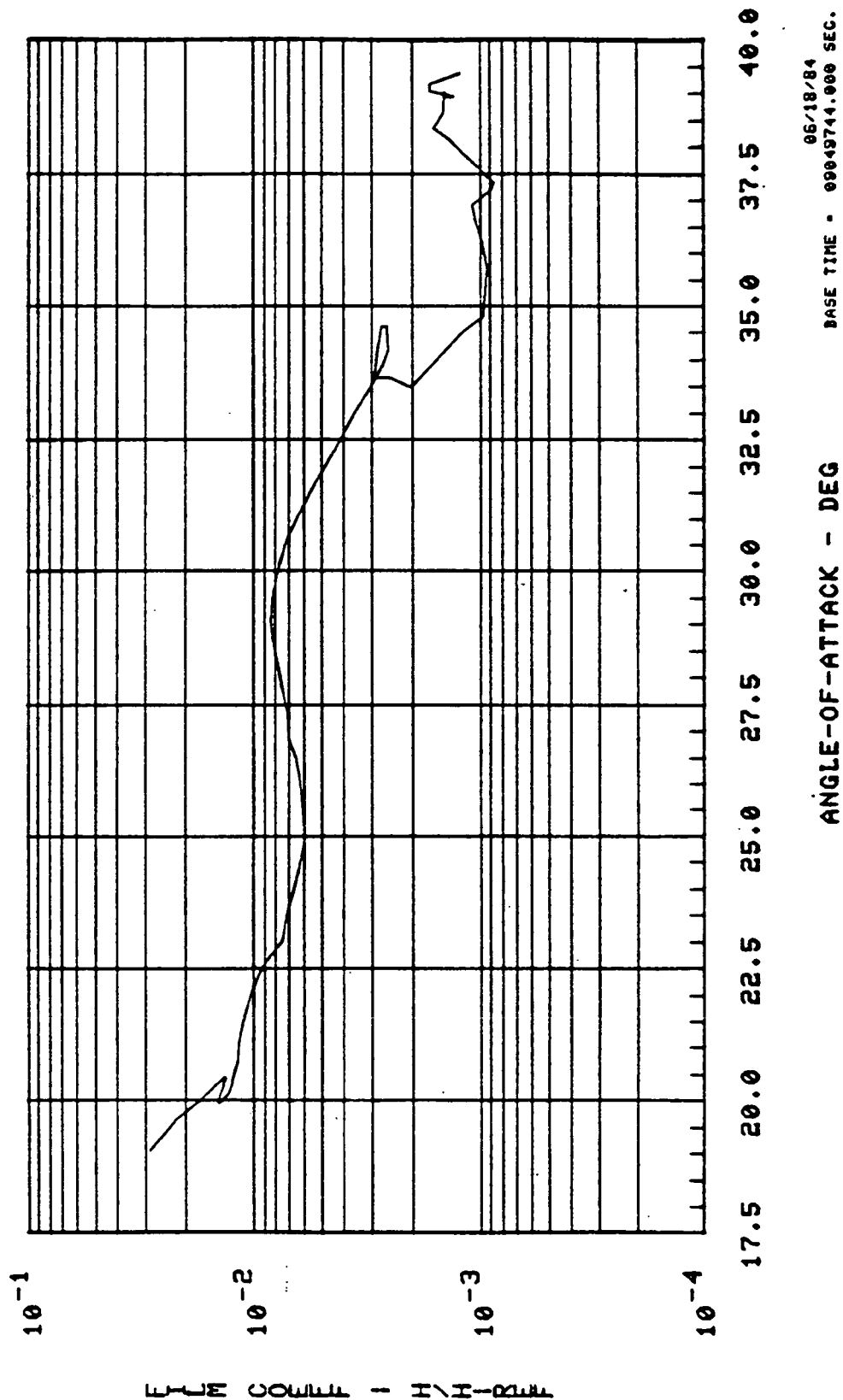
TIME - SECONDS

06/19/84

TEMPERATURE - F

# STS-1 (107 FT LENGTH CL $X/L=0.246$ ) FLIGHT PARAMETER COMPARIS

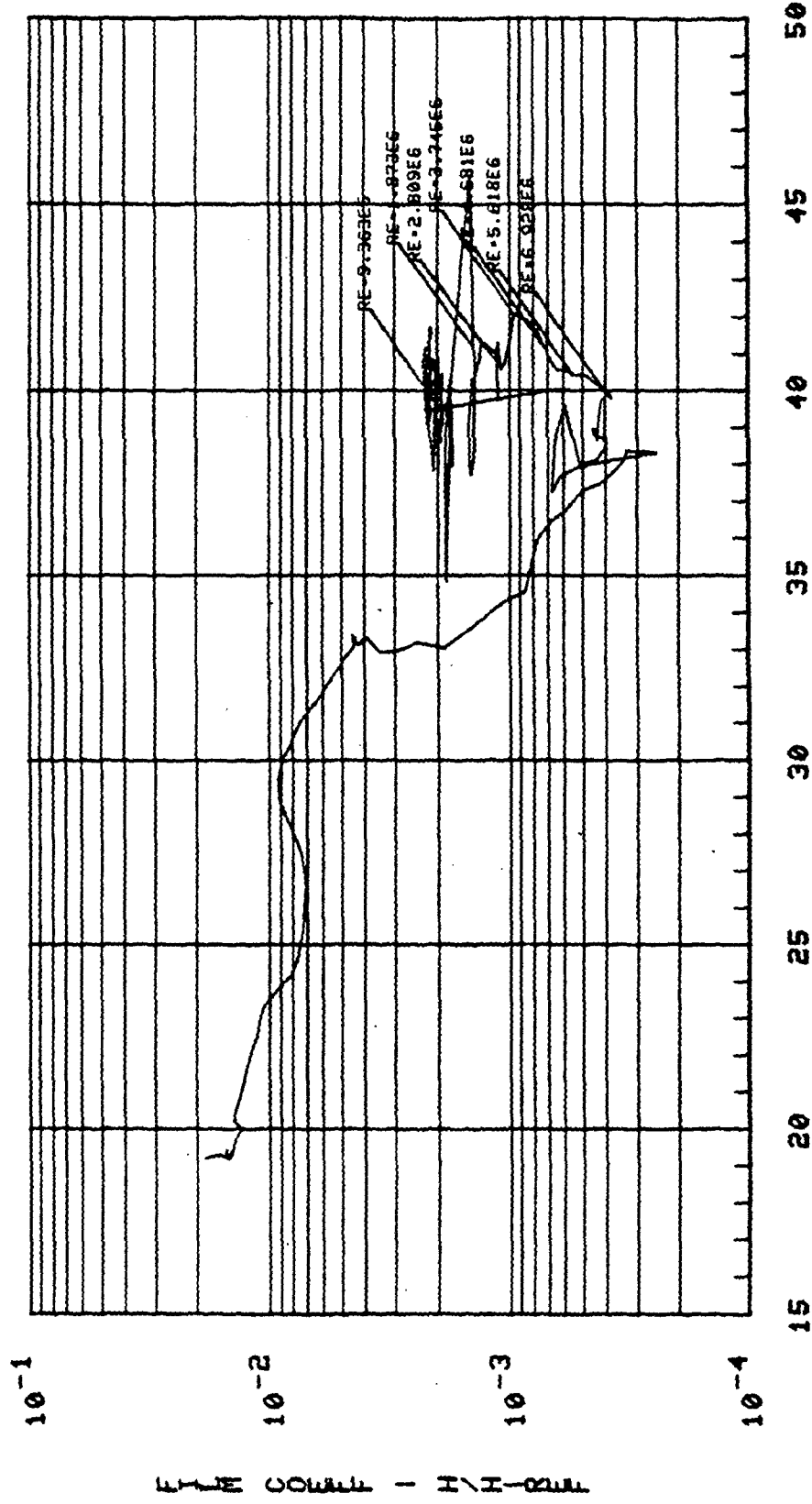
U07T98144/H-REF 1065-1460 SEC



06/18/84  
BASE TIME - 09049744.000 SEC.

# STS-2 (107 FT LENGTH CL X/L-0.246) FLIGHT PARAMETER COMPARIS

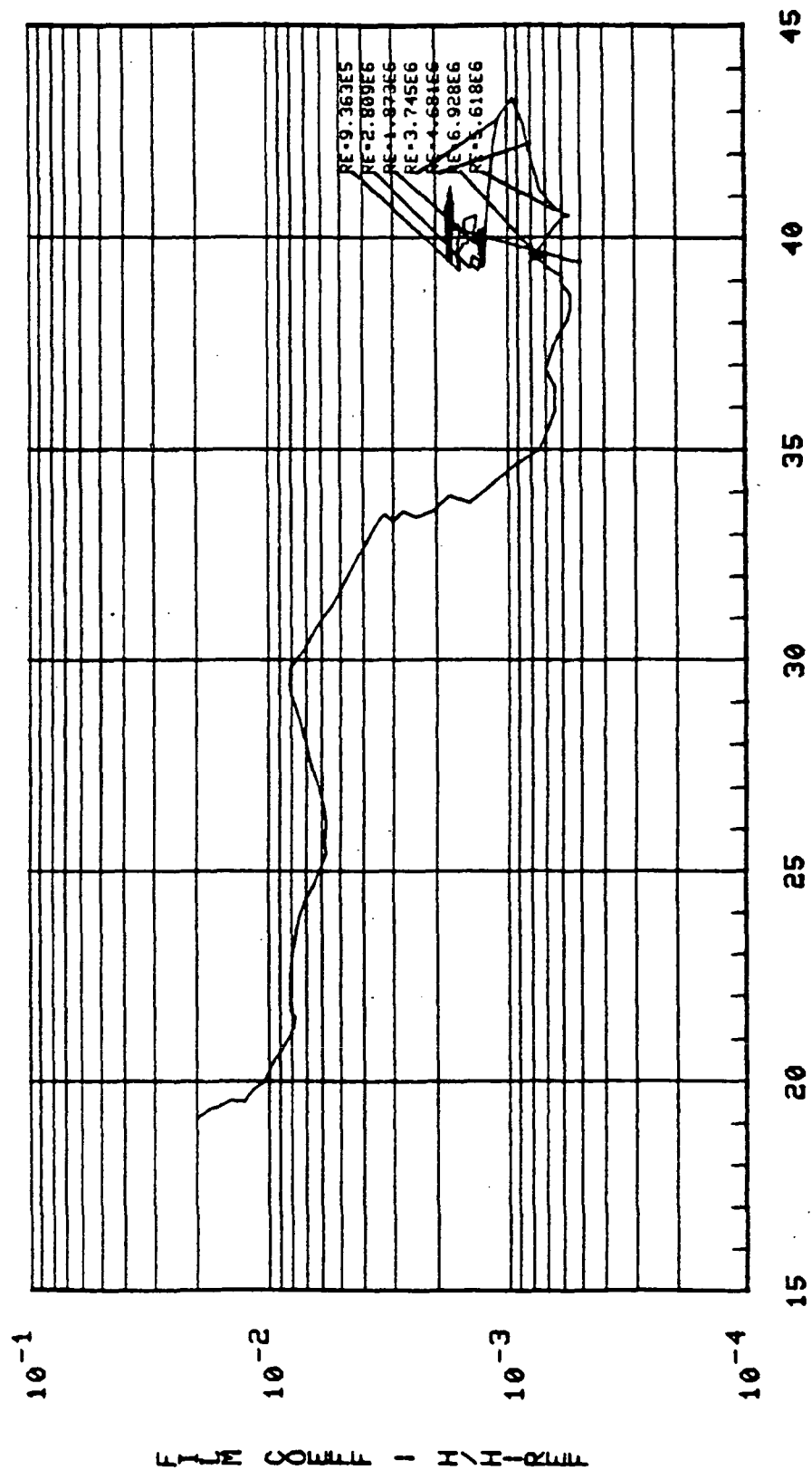
U07T9814A/H-REF 200-1480 SEC



06/18/84  
BASE TIME - 27550236.000 SEC.

# STS-3 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

U07T52144/H-REF 200-1380 SEC



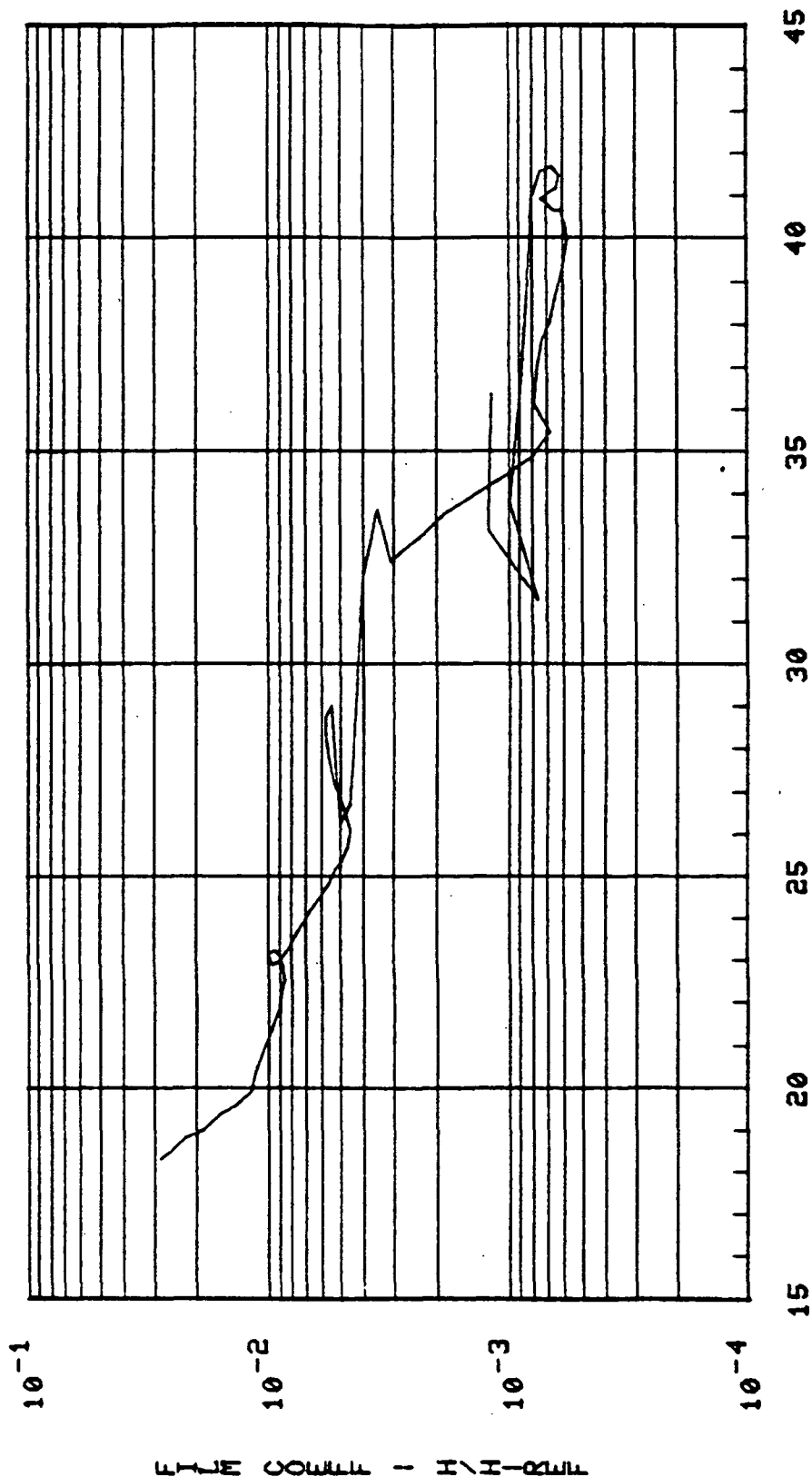
06/18/84  
BASE TIME - 07745684.000 SEC.

ANGLE-OF-ATTACK - DEG



# STS-4 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

U07T98144/H-REF 965-1300 SEC

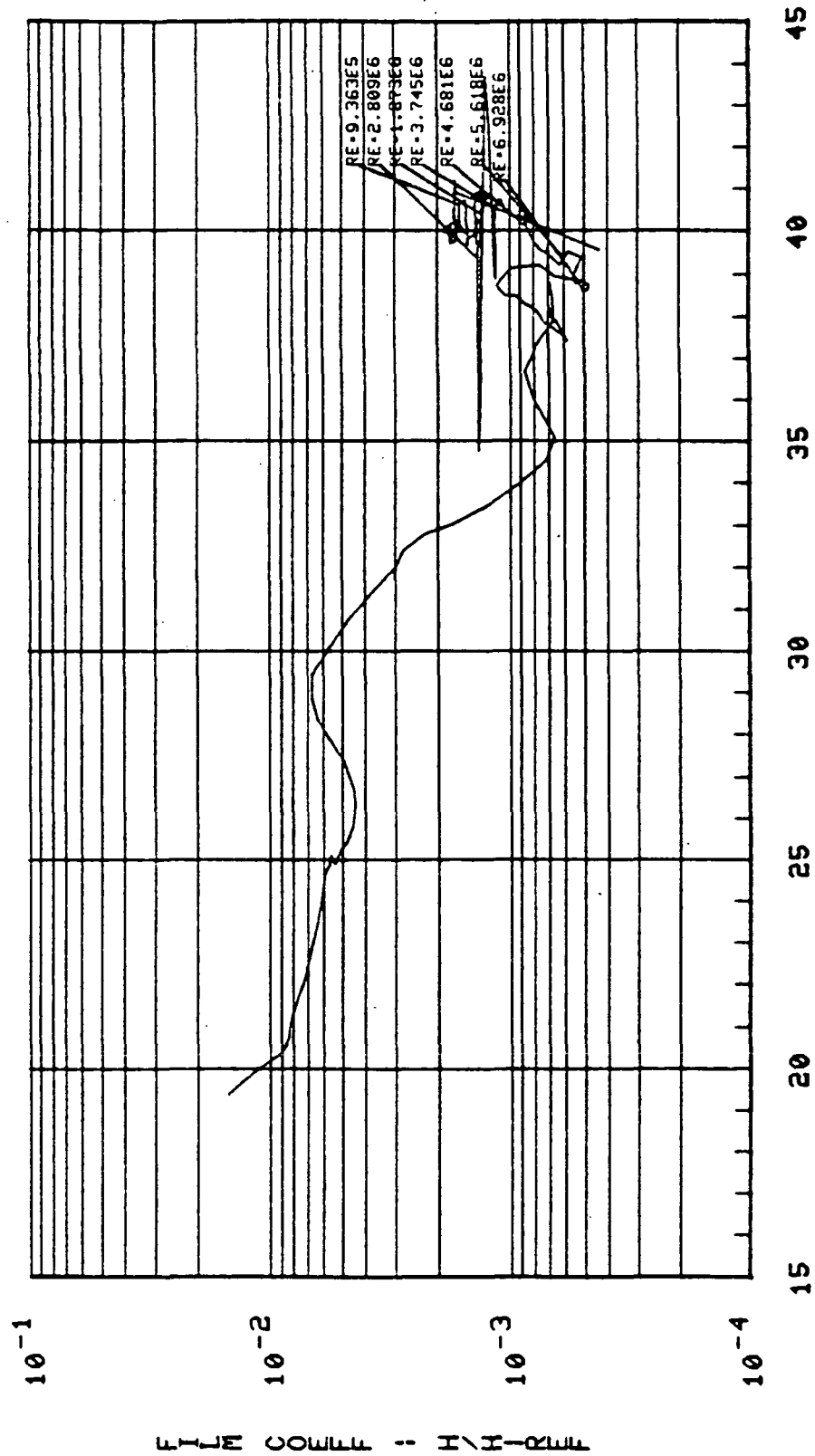


FLIGHT PARAMETER - H/H-REF

06/18/84  
BASE TIME - 1604023.000 SEC.  
ANGLE-OF-ATTACK - DEG

# STS-5 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

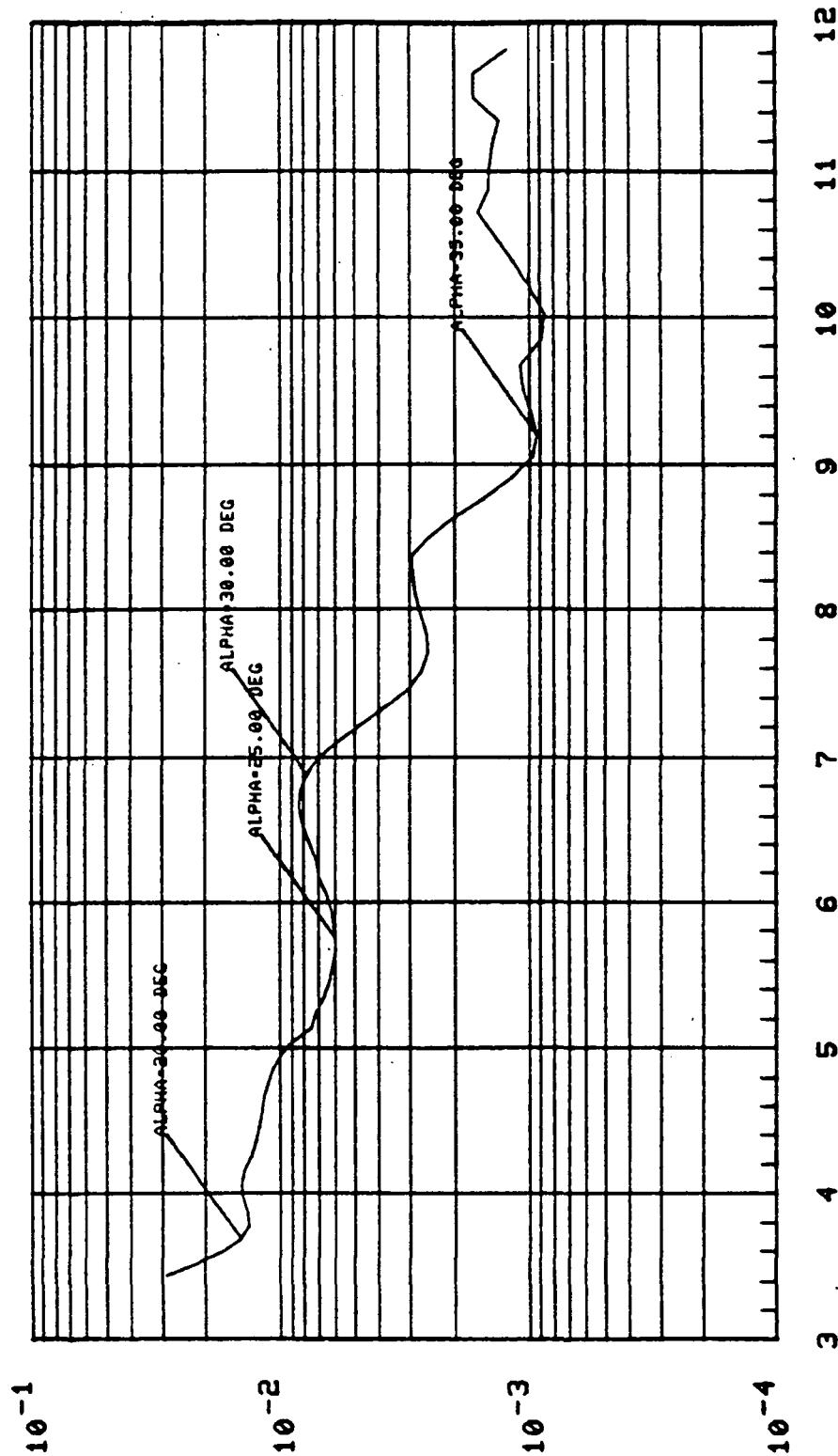
U07T92144/H-REF 150-1350 SEC



06/19/84  
BASE TIME - 27698591.000 SEC.

# STS-1 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

007T9814A/H-REF 1065-1460 SEC



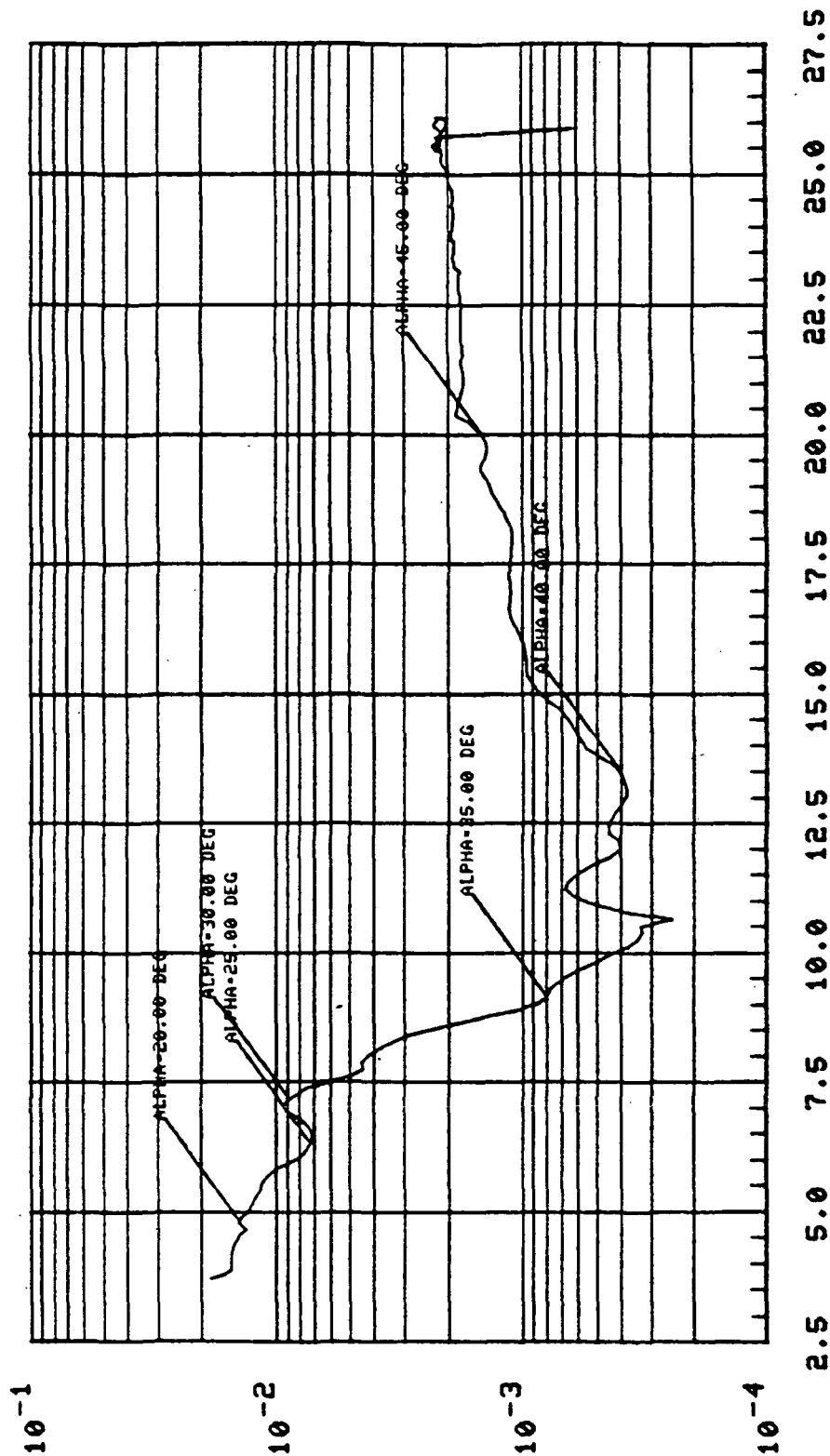
06/18/84  
BASE TIME - 00049744.000 SEC.

MACH NUMBER

LIFT COEFF - H/H-REF

# STS-2 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

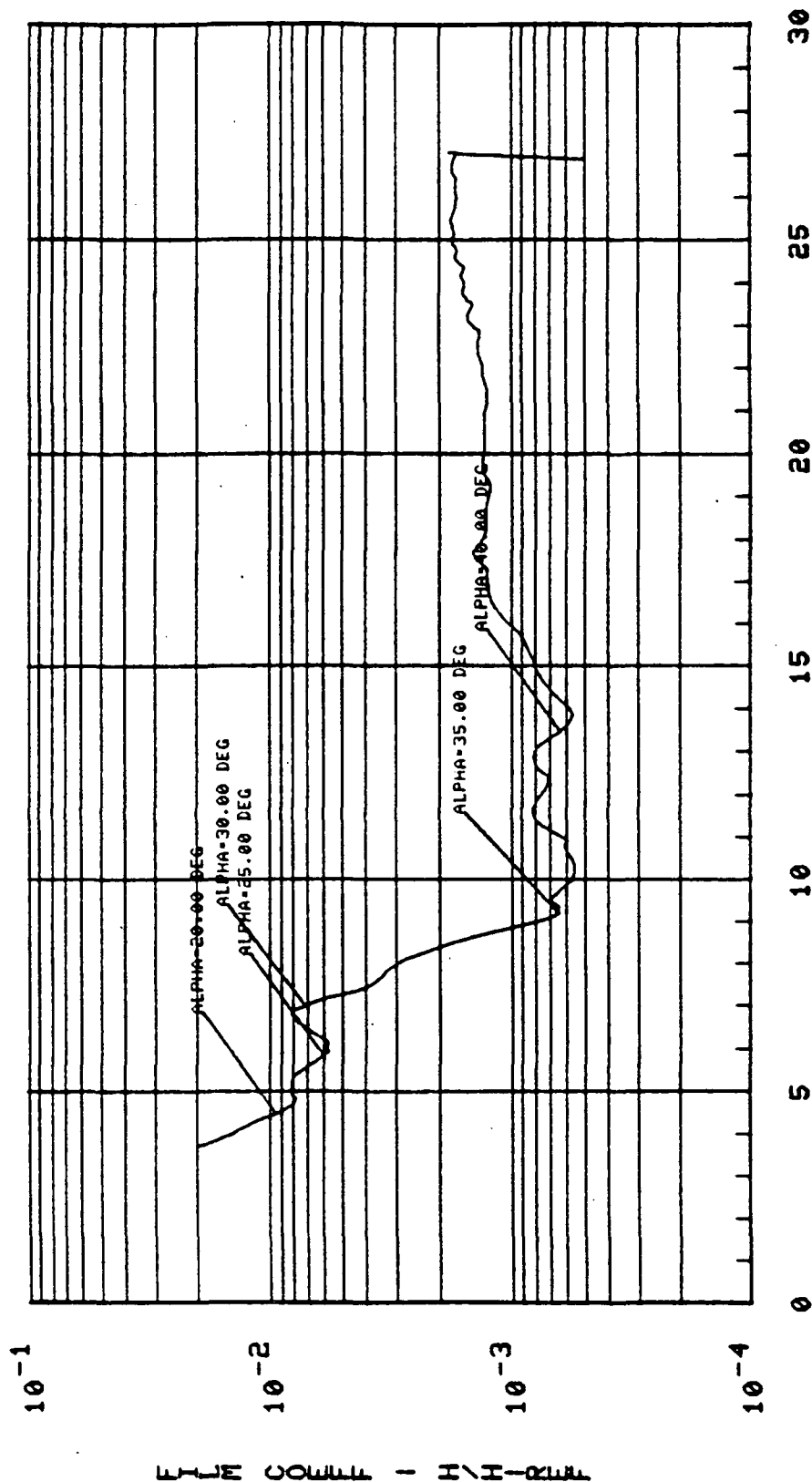
U07798146/H-REF 200-1480 SEC



06/18/84  
BASE TIME - 8759336.000 SEC.

# STS-3 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

U07TS0214A/H-REF 200-1380 SEC

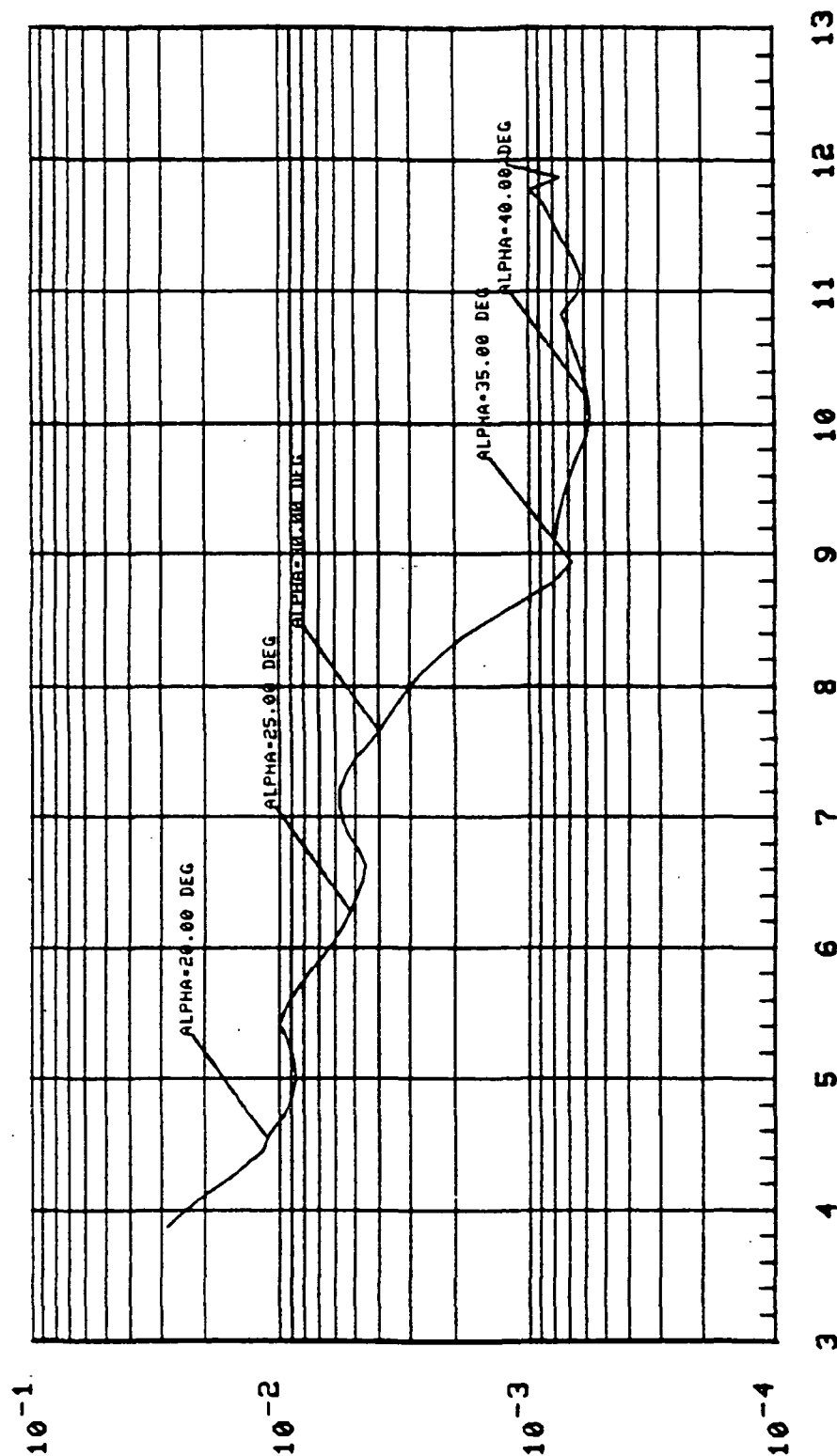


06/18/84  
BASE TIME - 07745684.000 SEC.

MACH NUMBER

# STS-4 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

U07T9814A/H-REF 965-1300 SEC



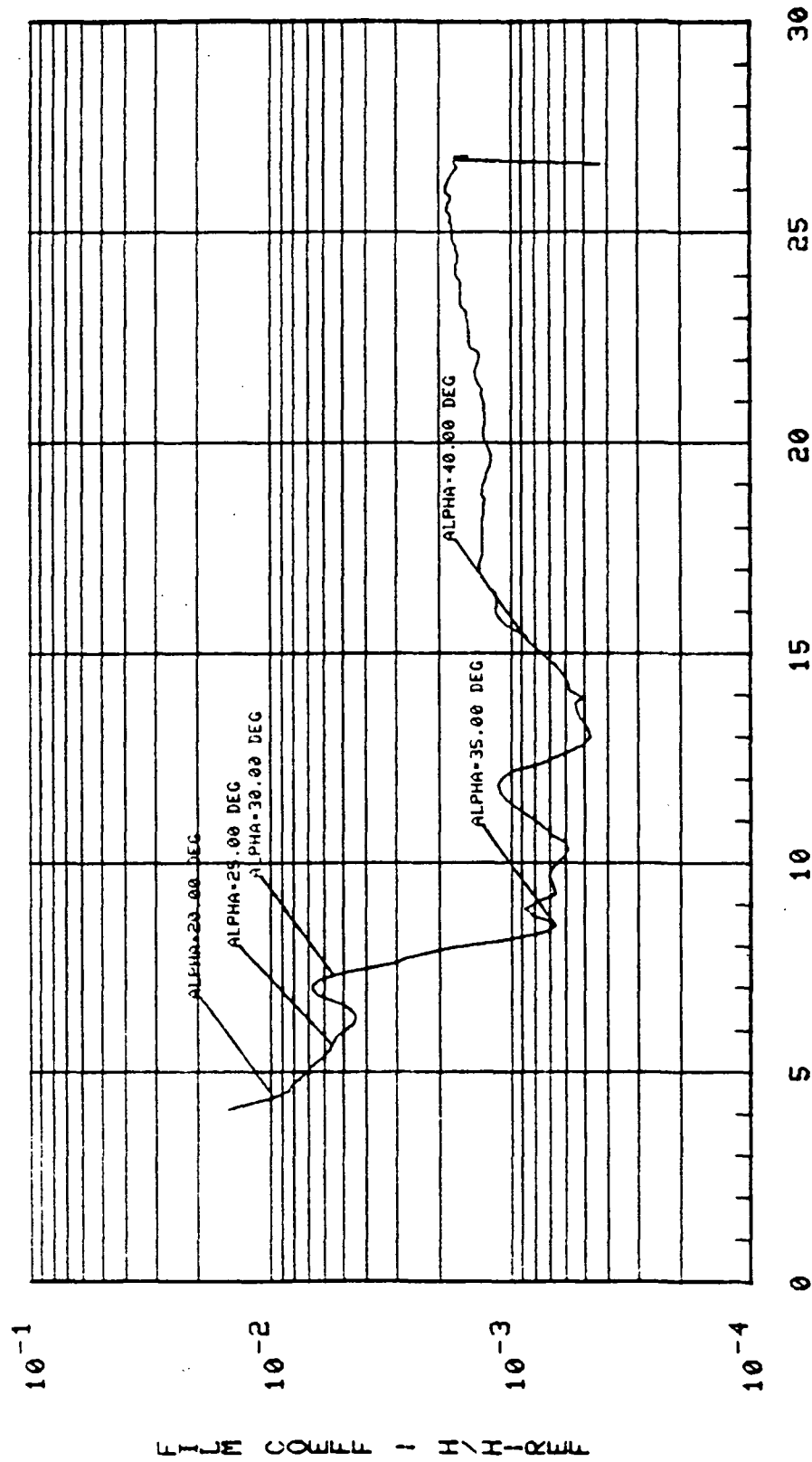
LIFT COEFF - H/H-REF

06/18/84  
BASE TIME - 1604023.000 SEC.

MACH NUMBER

# STS-5 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

U07T9214H/H-REF 150-1350 SEC

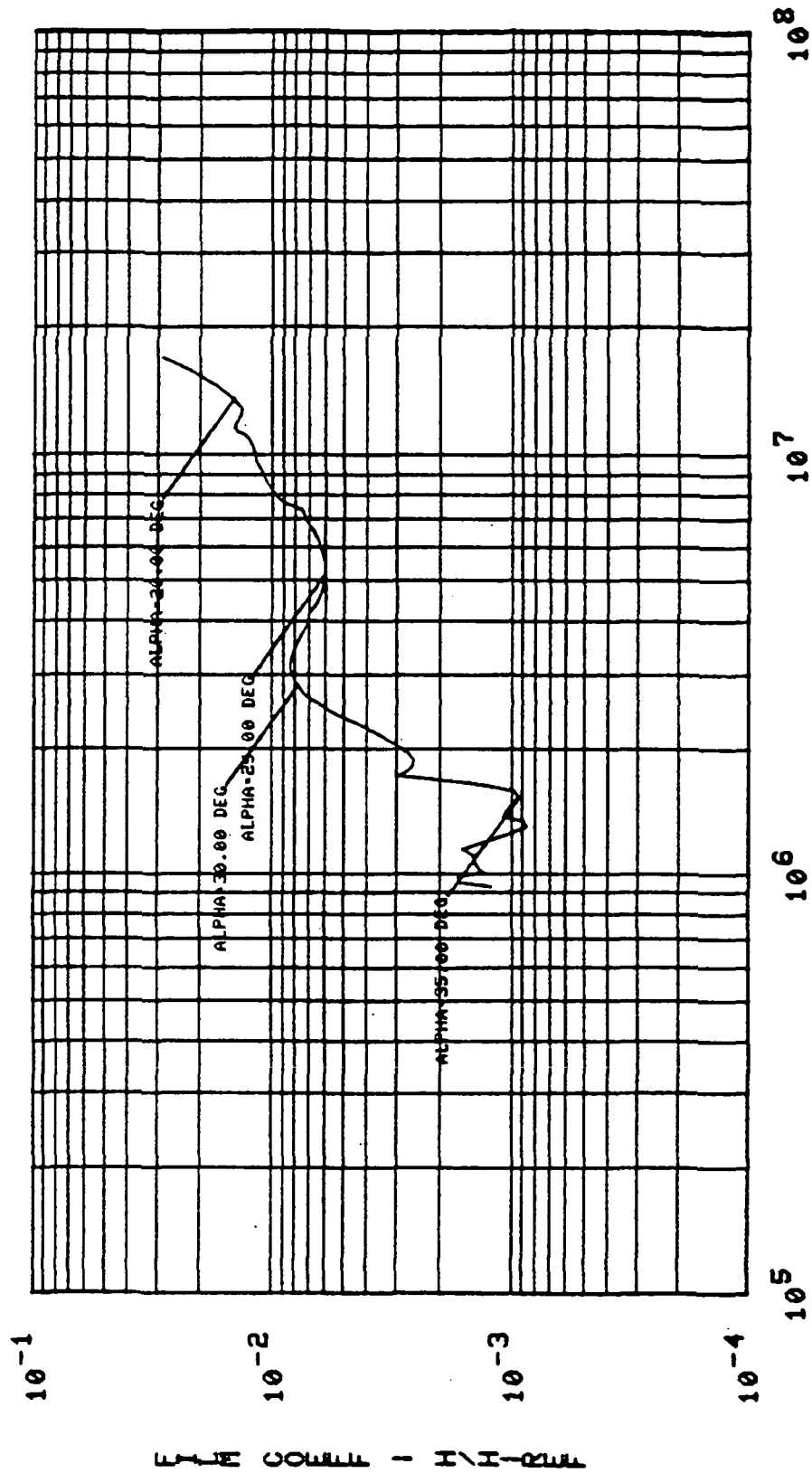


06/19/84  
BASE TIME - 27698591.000 SEC.

MACH NUMBER

# STS-1 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

U07T9814A/H-REF 1065-1460 SEC



REYNOLDS NUMBER (NS)

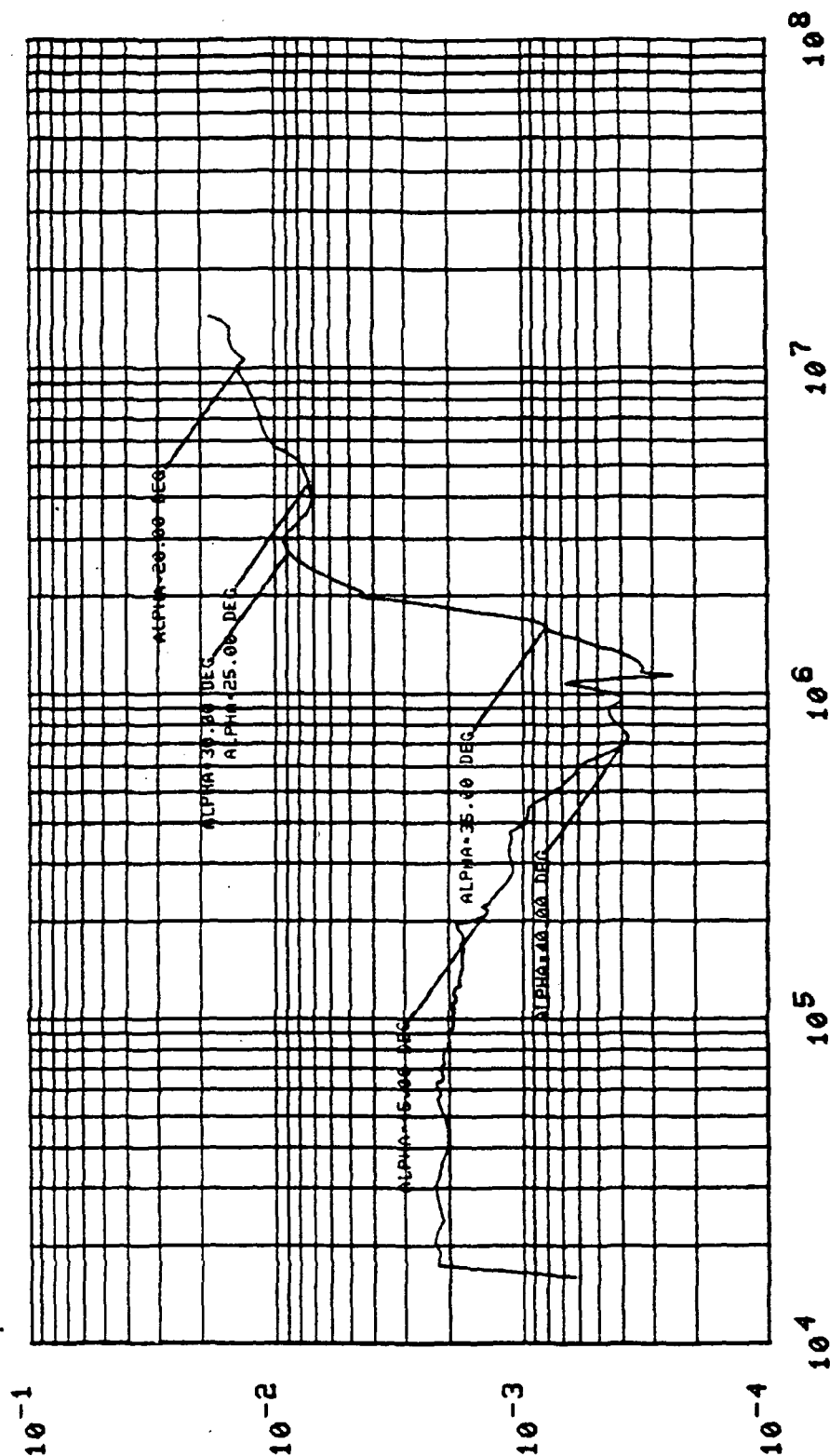
BASE TIME • 09049744.000 SEC.

06/18/84



# STS-2 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

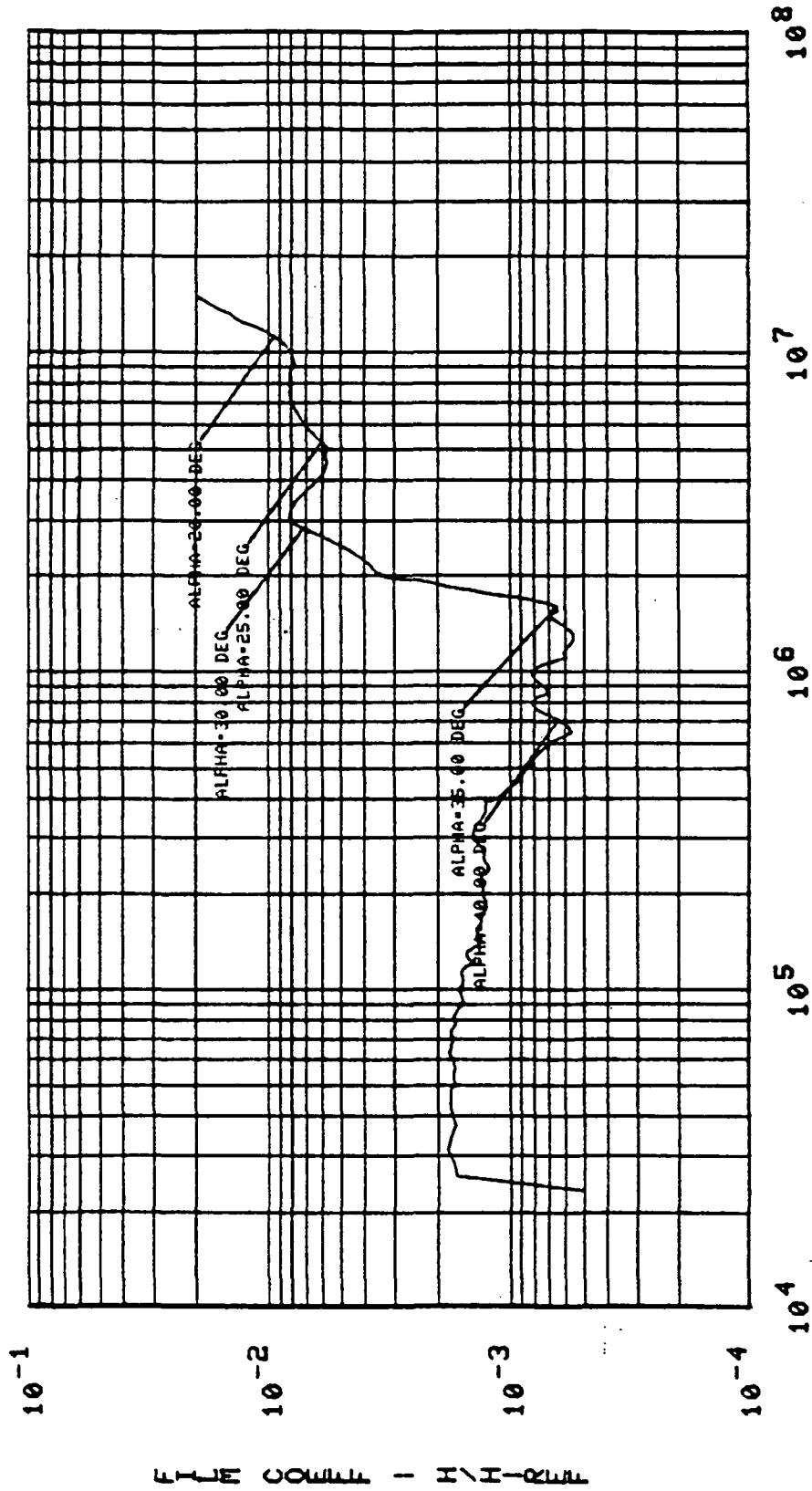
U07T9814A/H-REF 230-1480 SEC



REYNOLDS NUMBER (NS) 06/18/84  
BASE TIME - 27550236.000 SEC.

# STS-3 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

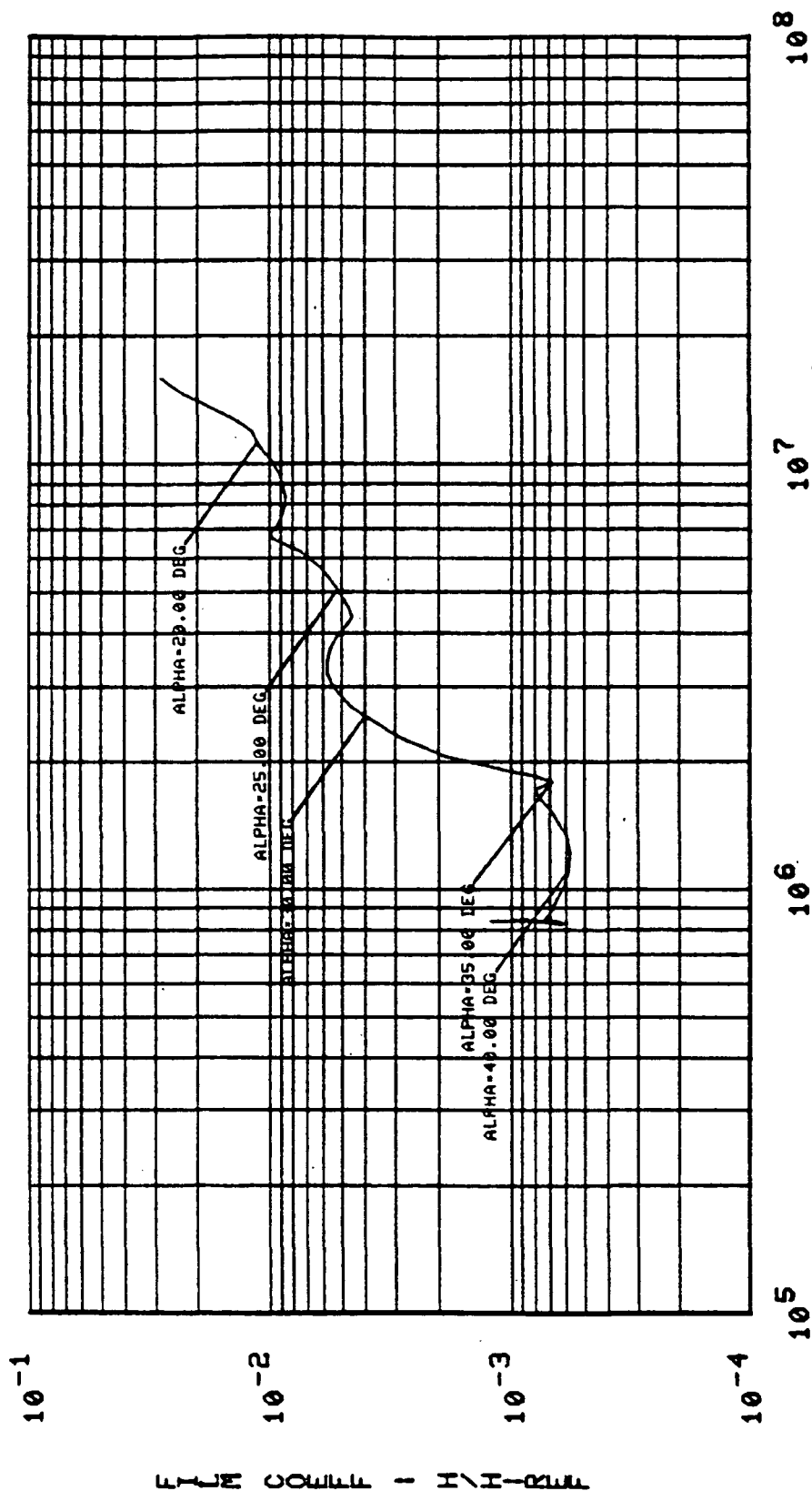
U07T9814/H-H-REF 200-1380 SEC



REYNOLDS NUMBER (NS) 06/18/84  
BASE TIME - 07745684.000 SEC.

# STS-4 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

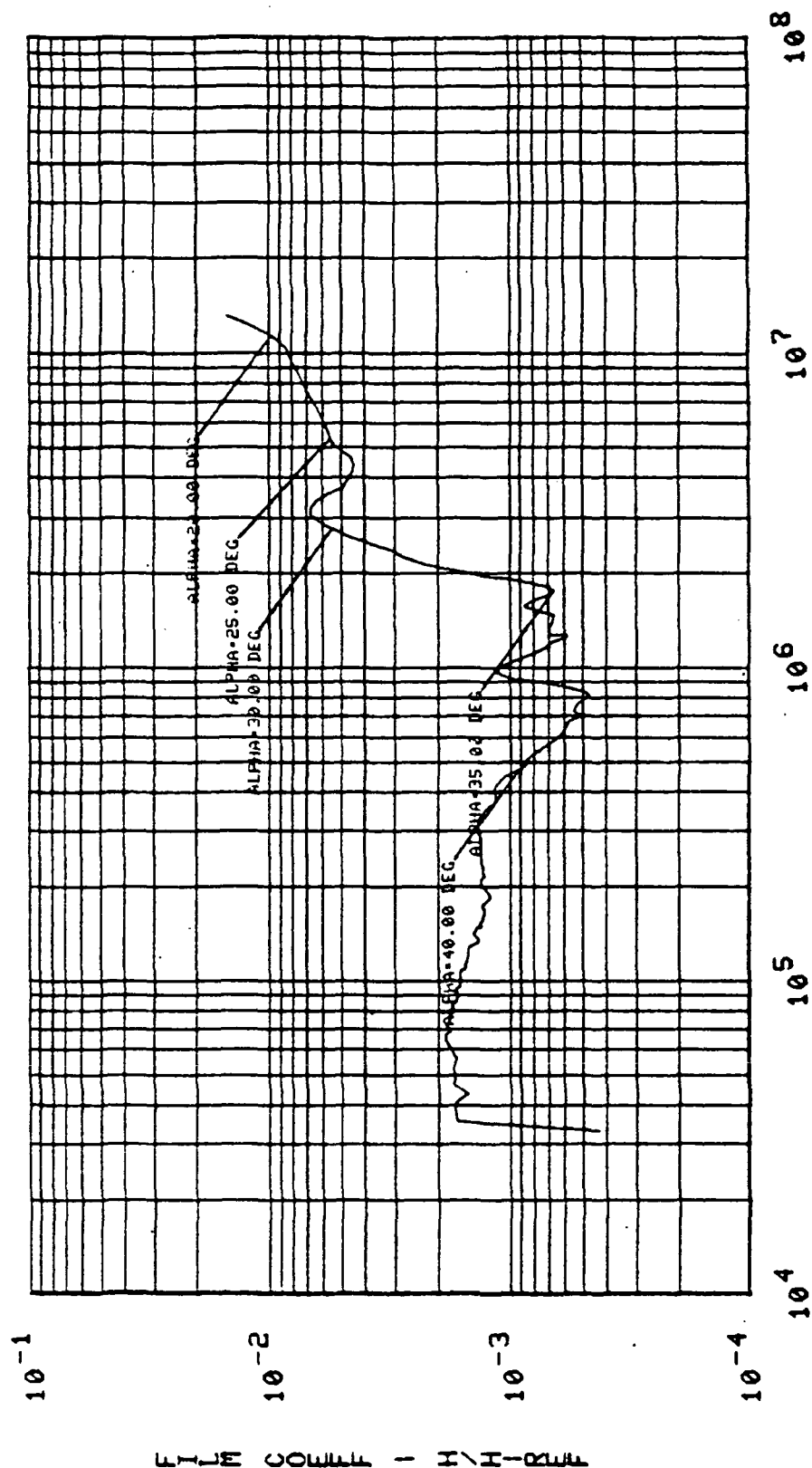
U07T98144/H-REF 965-1300 SEC



REYNOLDS NUMBER (NS) BASE TIME - 16040423.000 SEC. 06/18/84

# STS-5 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

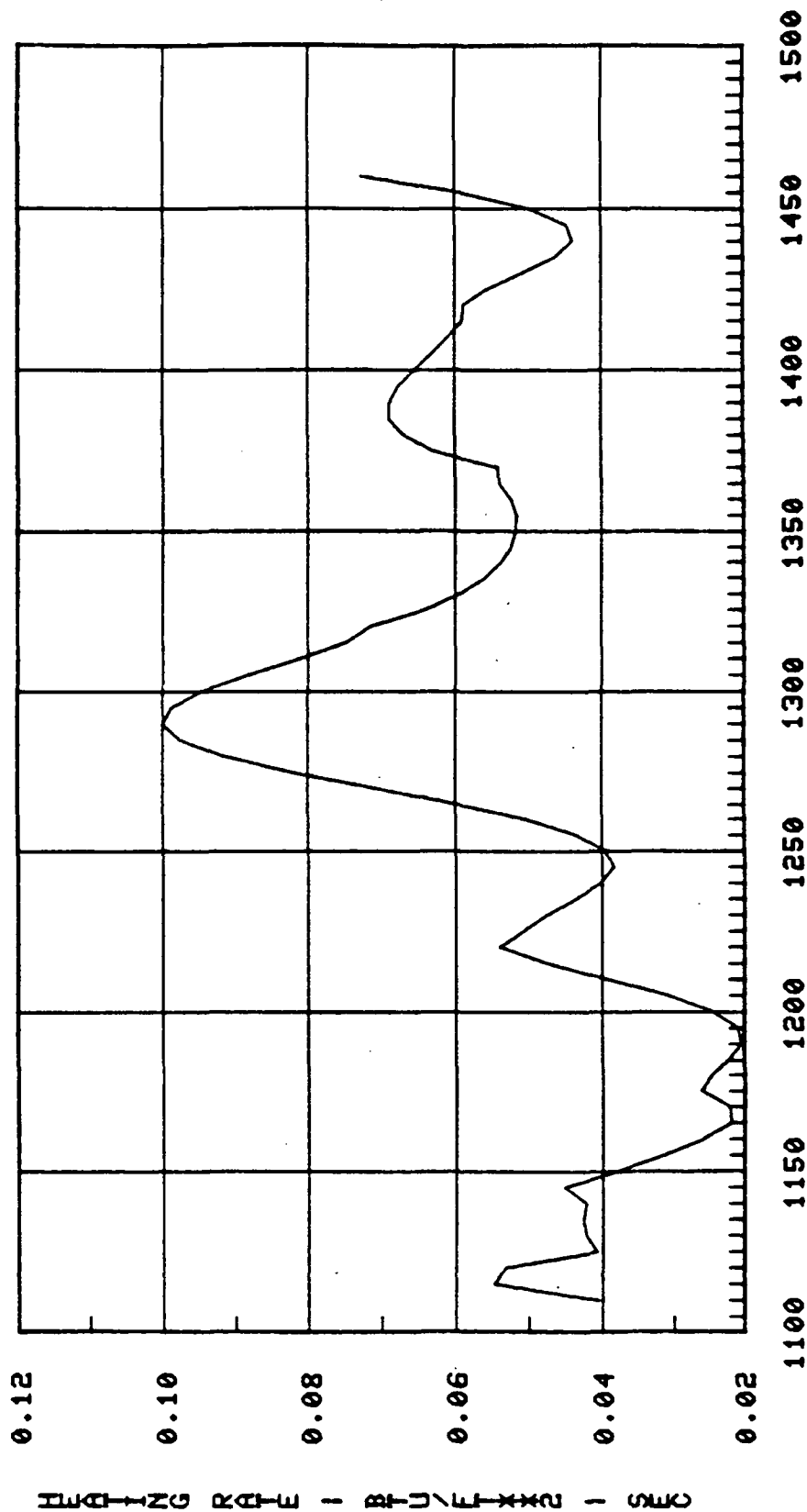
067T92146/H-REF 150-1350 SEC



REYNOLDS NUMBER (NS) 06/19/84  
BASE TIME - 27698591.000 SEC.

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U07T98144

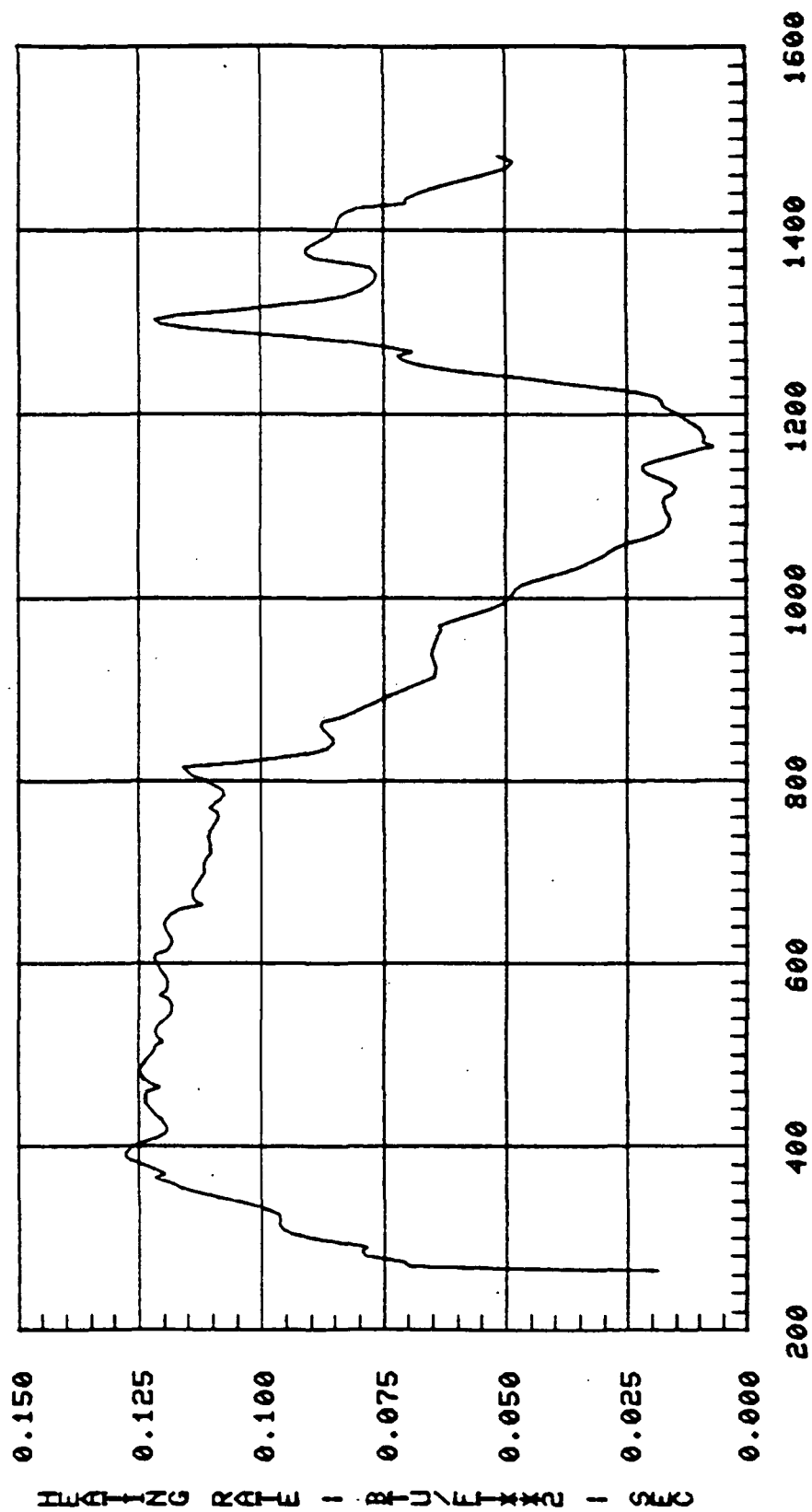


TIME - SECONDS

05/18/84

# STS-2 (107 FT LENGTH CL X/L-0.246) FLIGHT PARAMETER COMPARIS

U07T98144

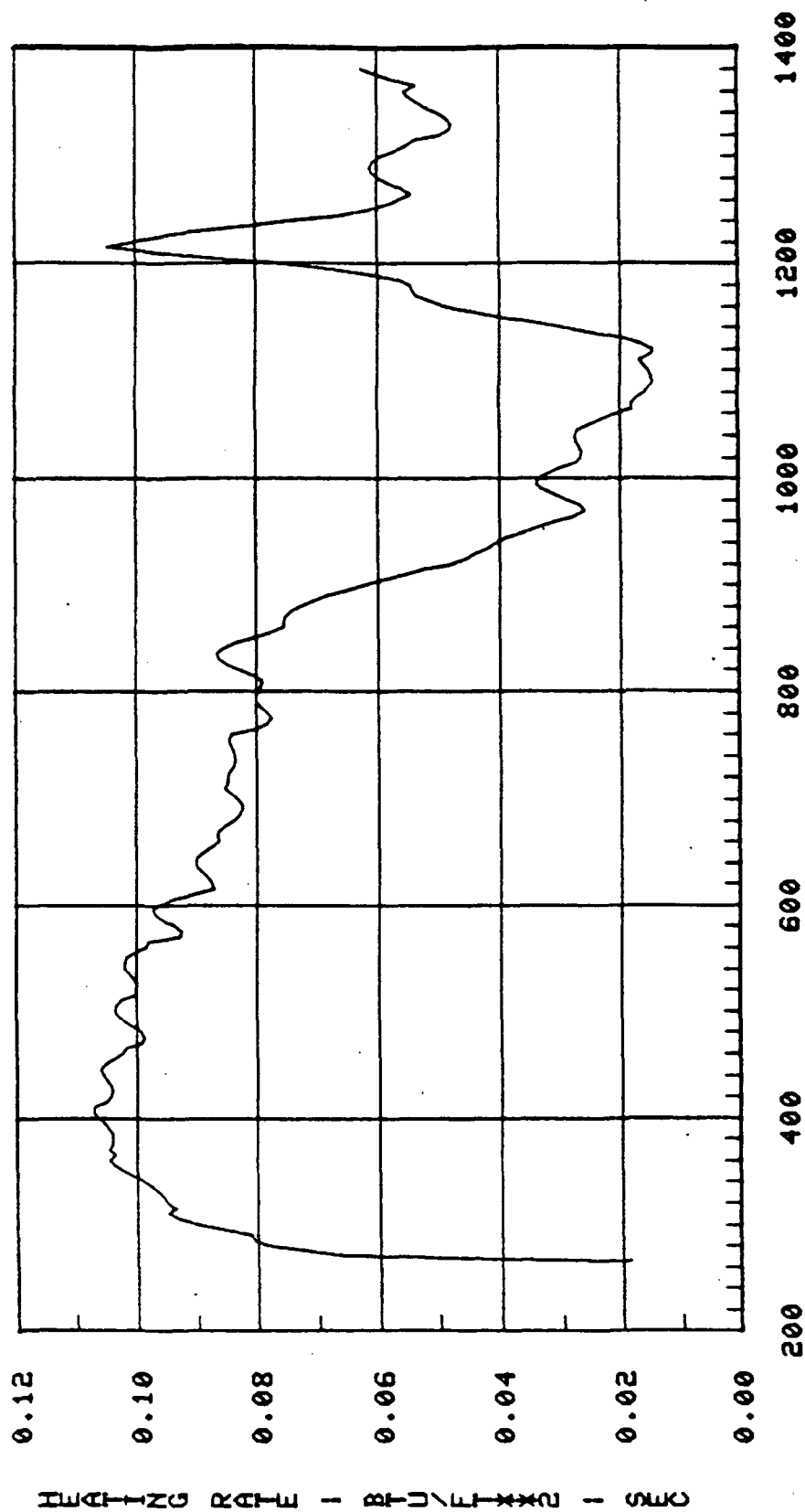


TIME - SECONDS

06/18/84

# STS-3 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

U07TS814A

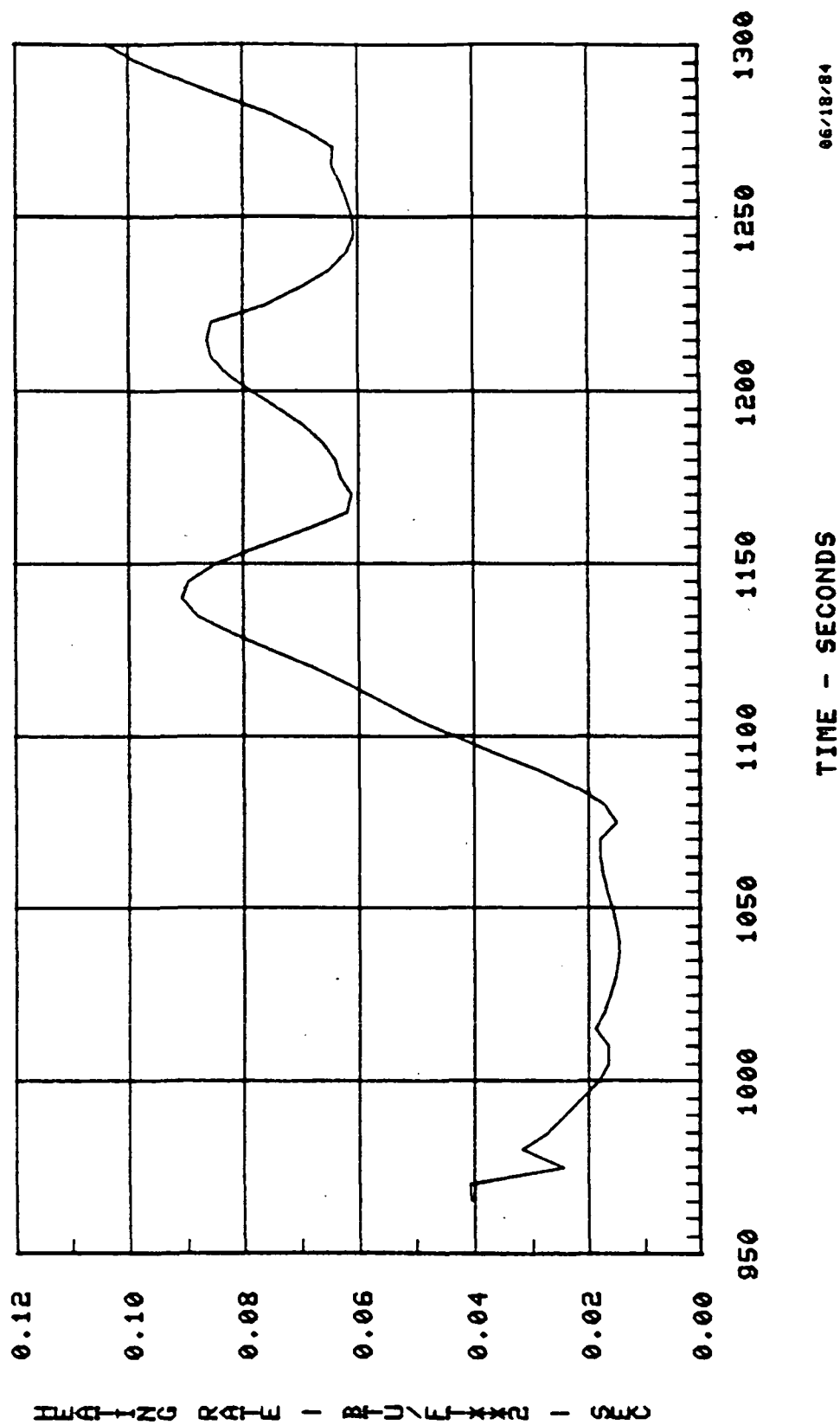


TIME - SECONDS

06/18/84

# STS-4 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

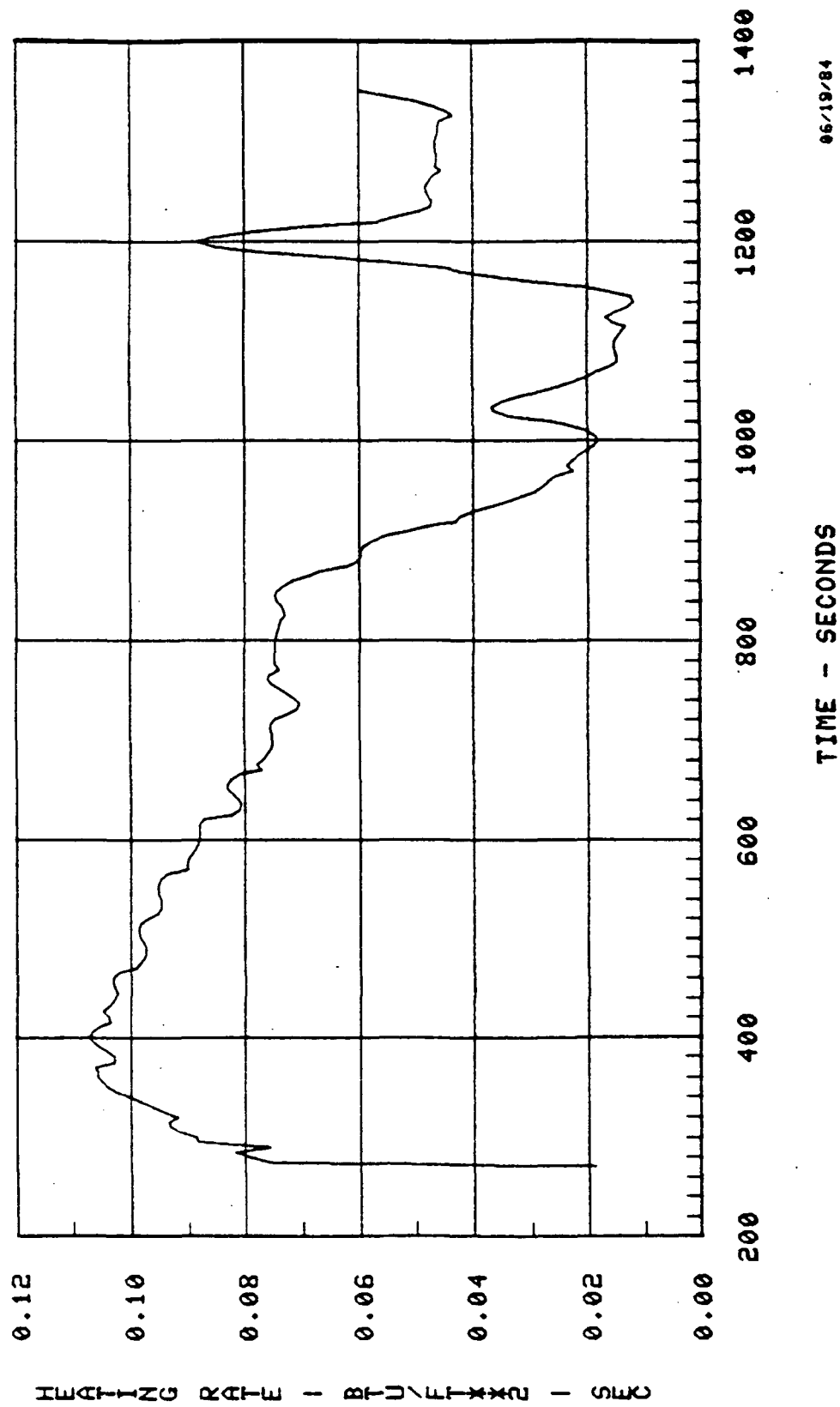
U07T9814A





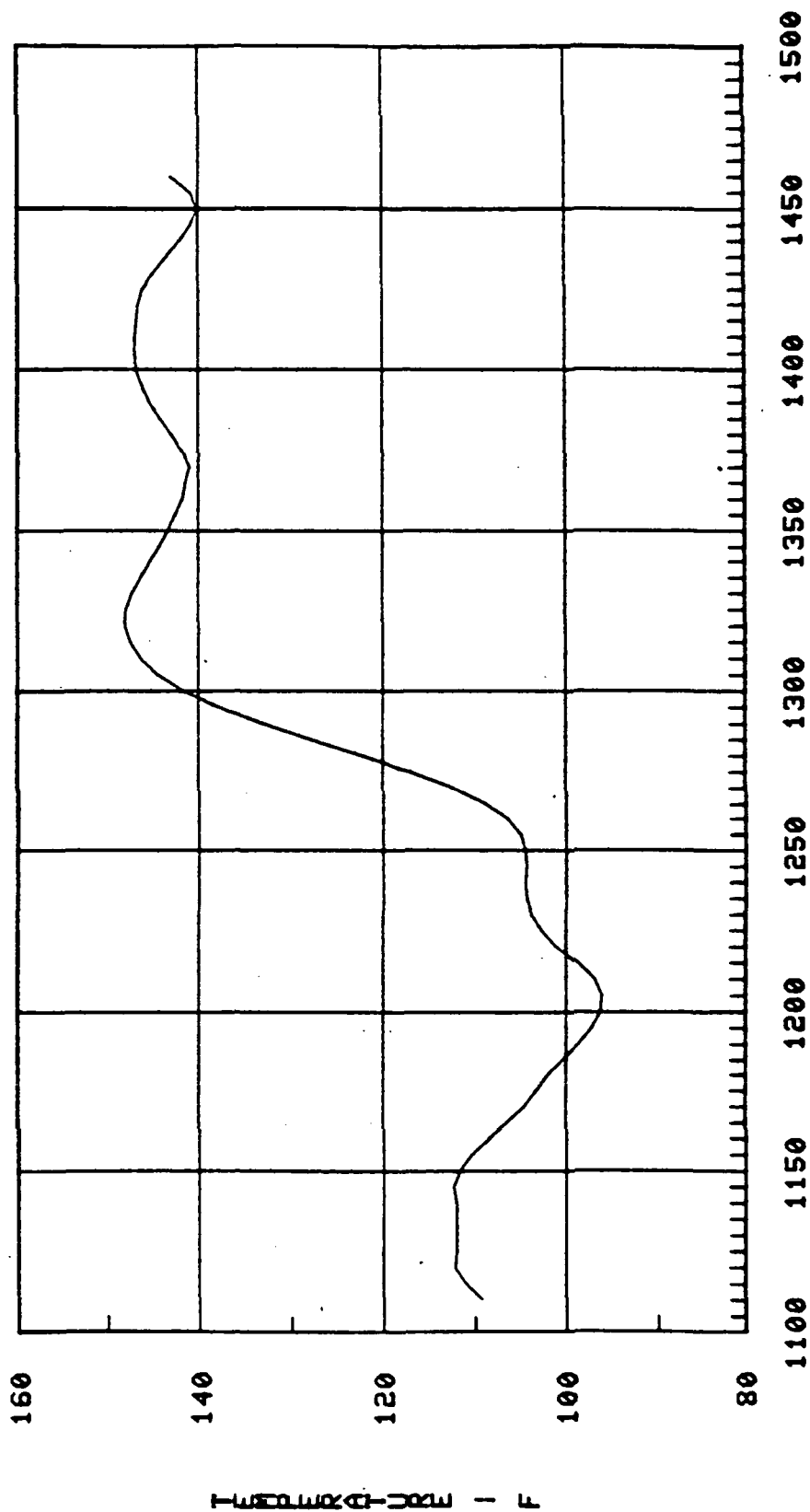
# STS-5 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

U07T3014A



# STS-1 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

U07T98144

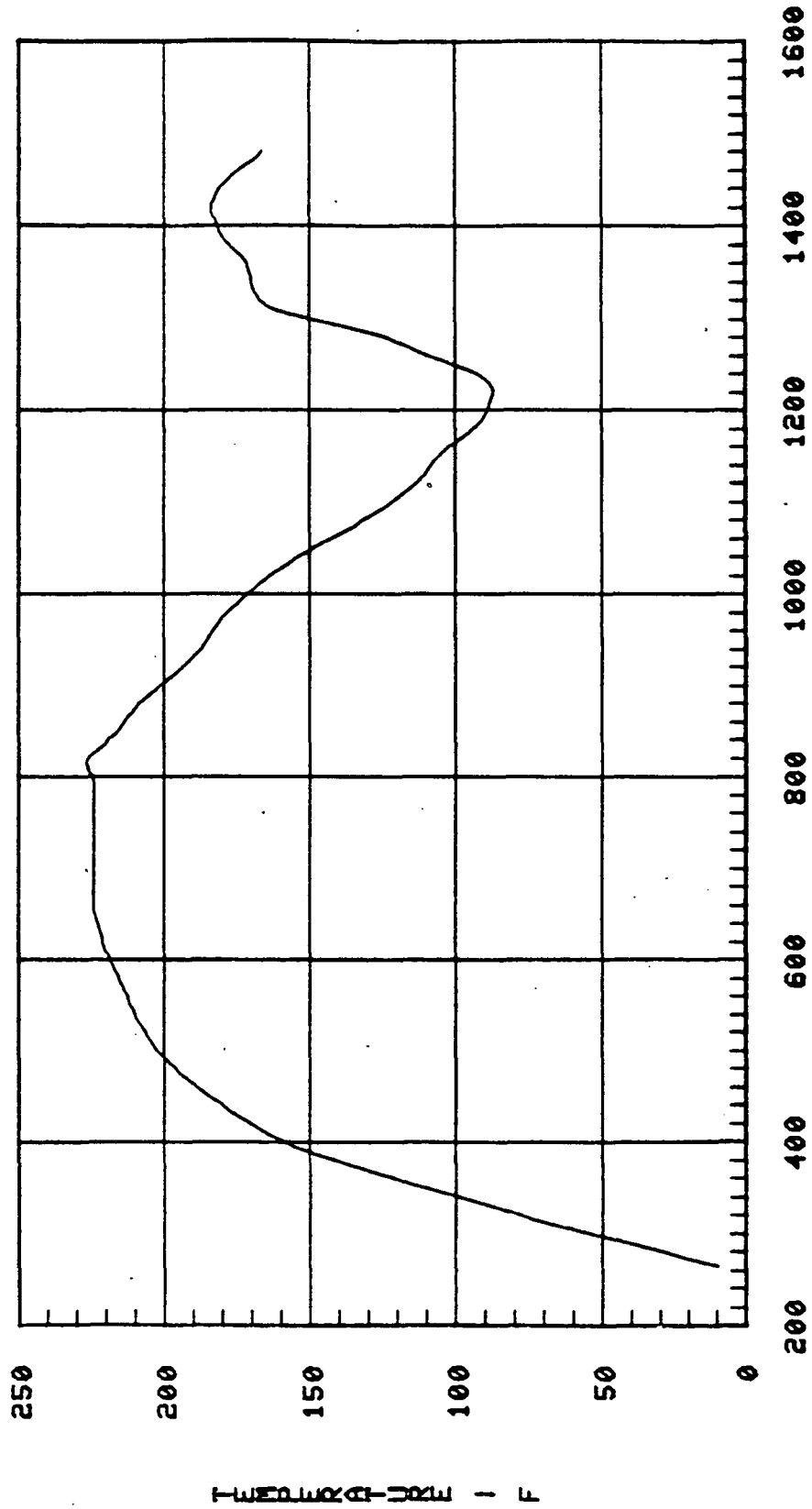


06/18/84

TIME - SECONDS

# STS-2 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

U07T9814A

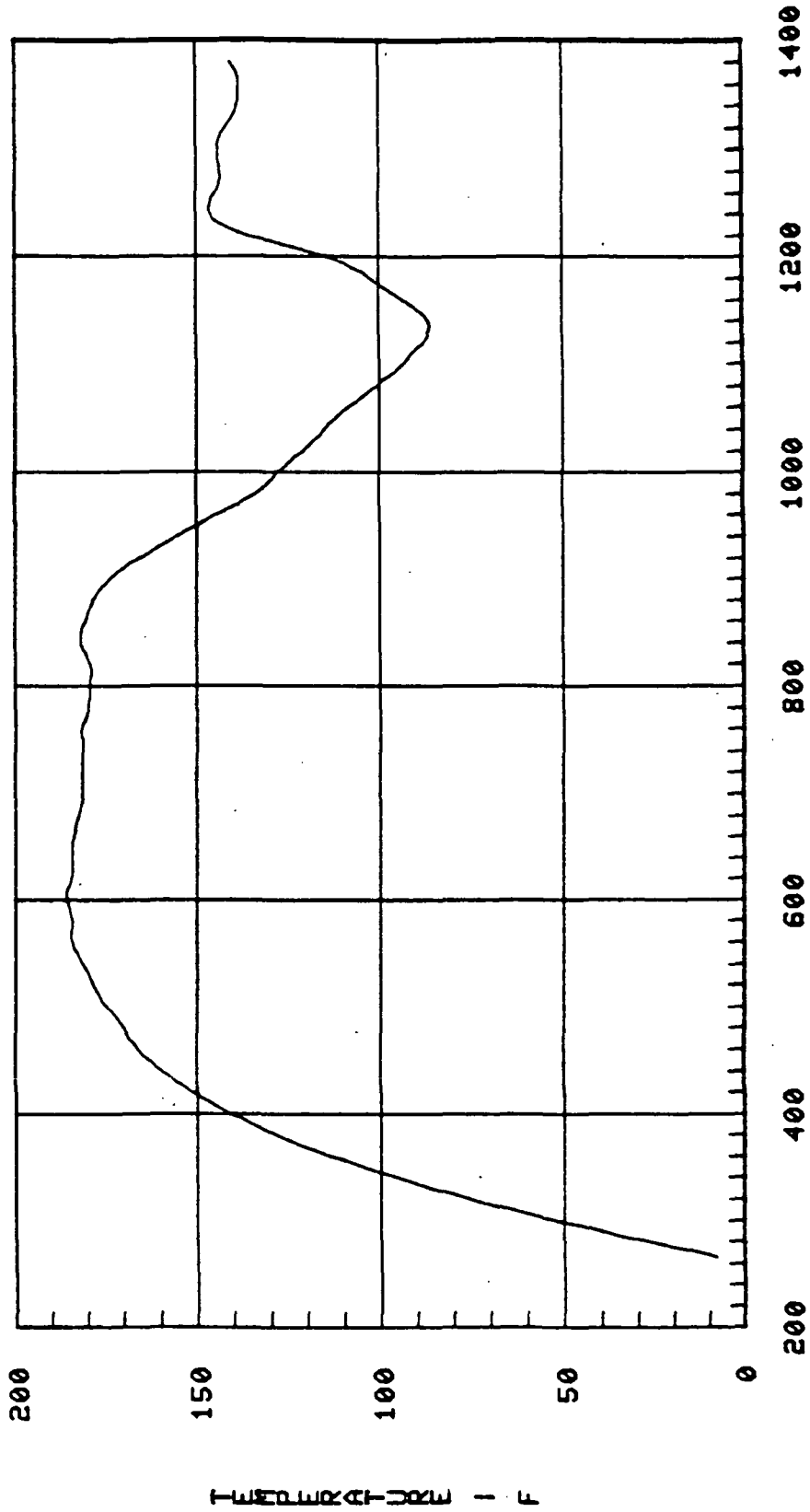


TIME - SECONDS

06/18/84

# STS-3 (107 FT LENGTH CL X/L-0.246) FLIGHT PARAMETER COMPARIS

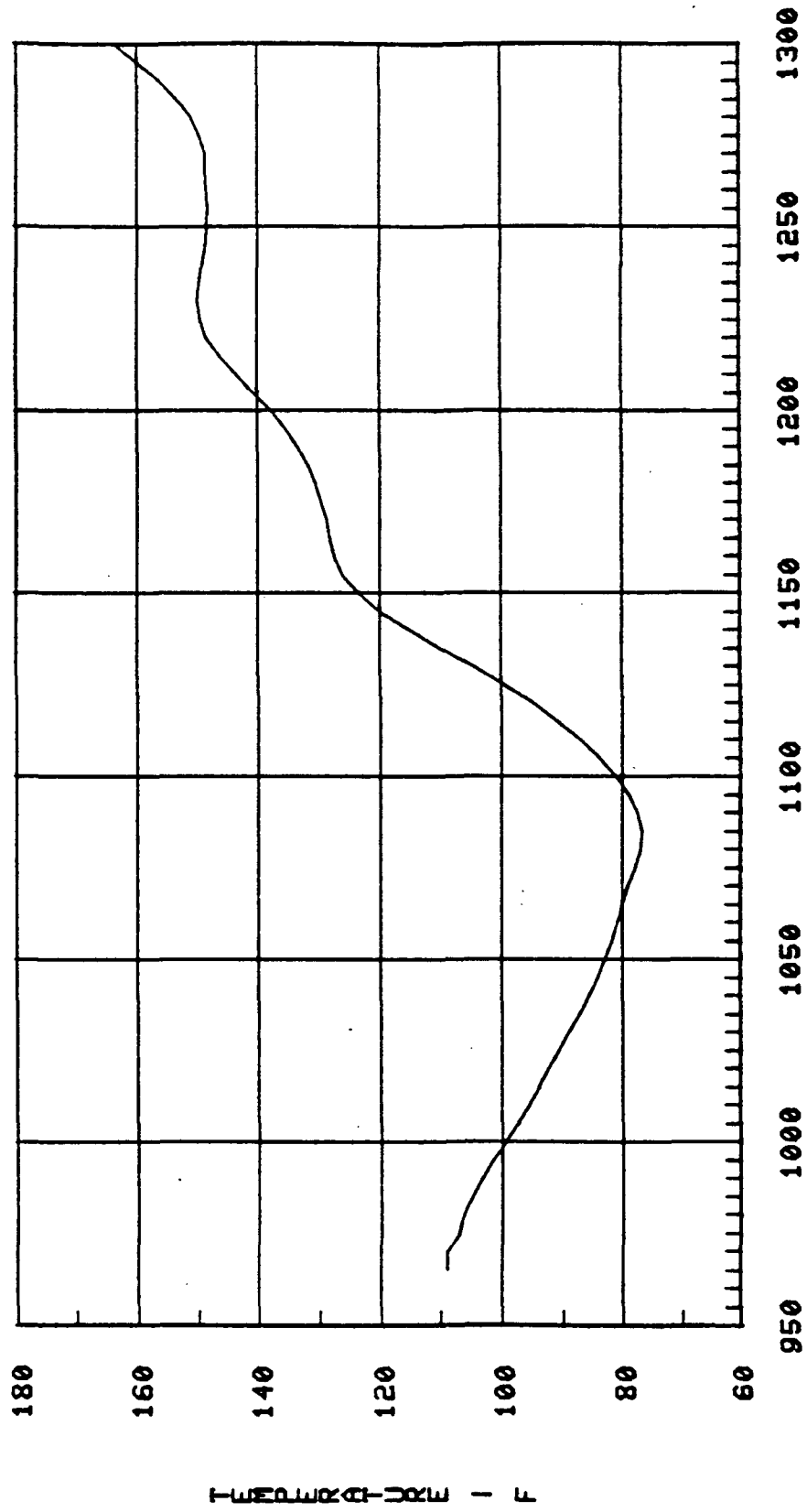
U07T9814A



06/18/84

# STS-4 (107 FT LENGTH CL X/L=0.246) FLIGHT PARAMETER COMPARIS

U07T5814A

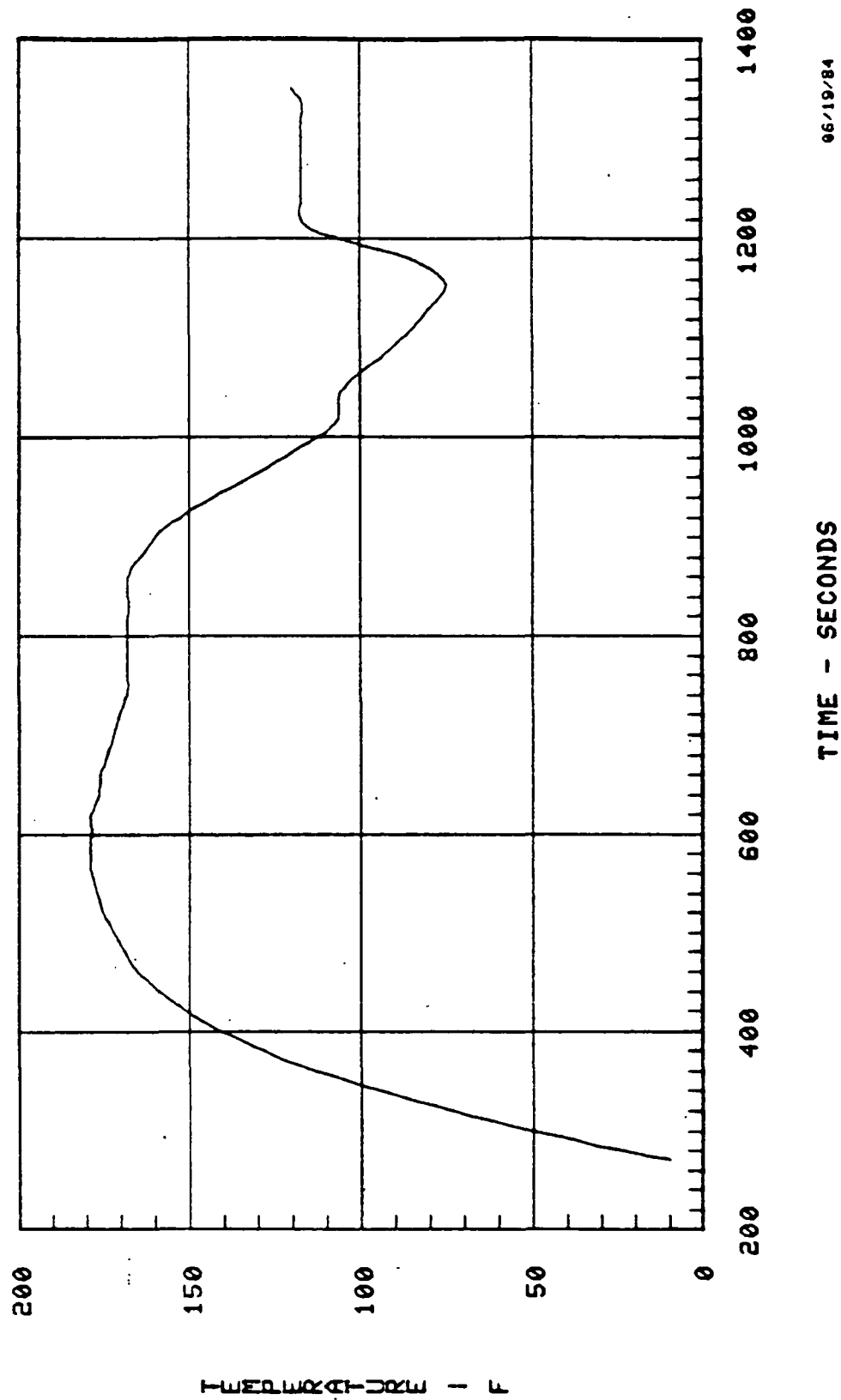


TIME - SECONDS

06/18/84

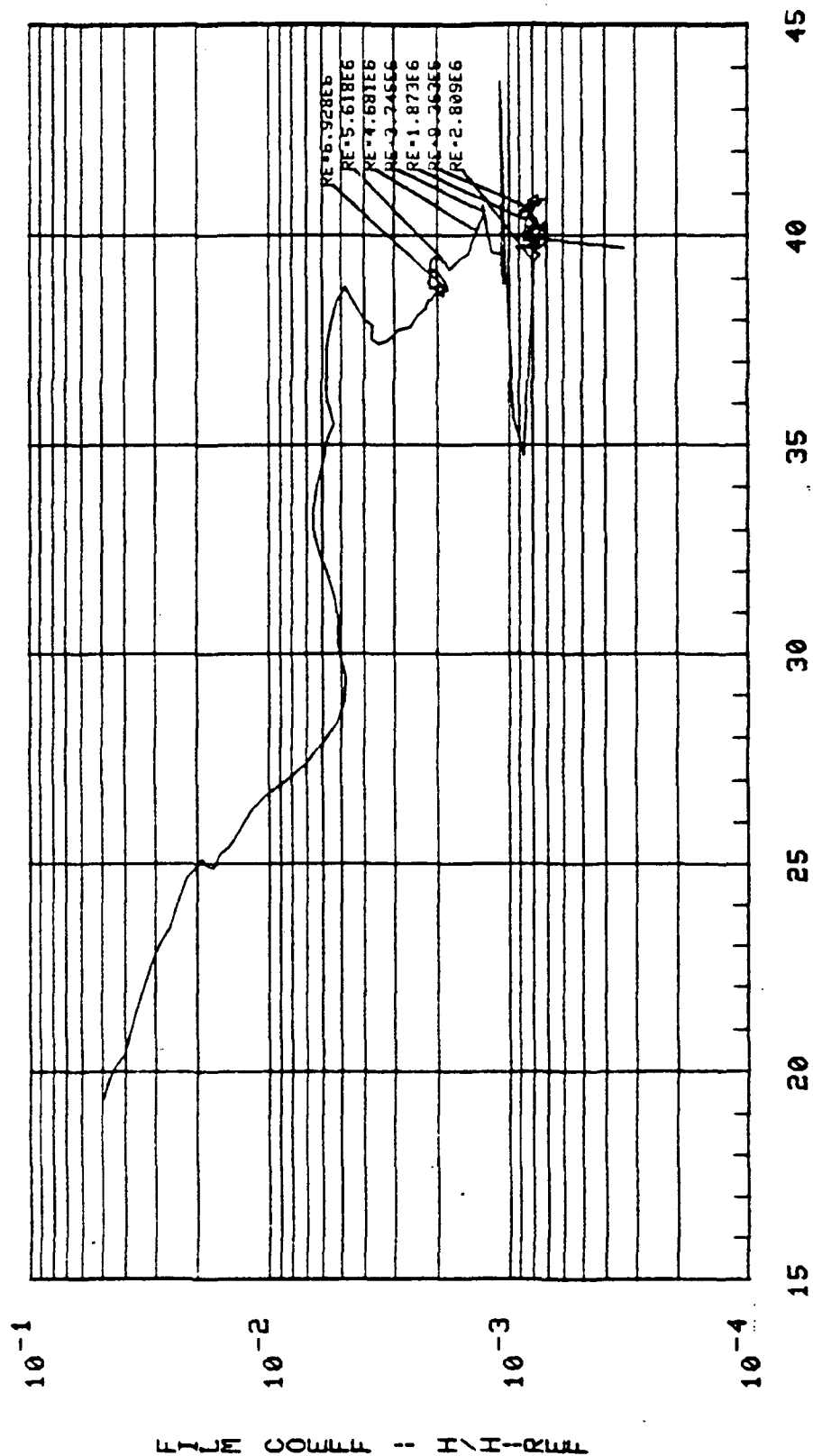
# STS-5 (107 FT LENGTH CL $X/L=0.246$ ) FLIGHT PARAMETER COMPARIS

U07T9814H



# STS-5 (107 FT LENGTH CL X/L=0.298) FLIGHT PARAMETER COMPARIS

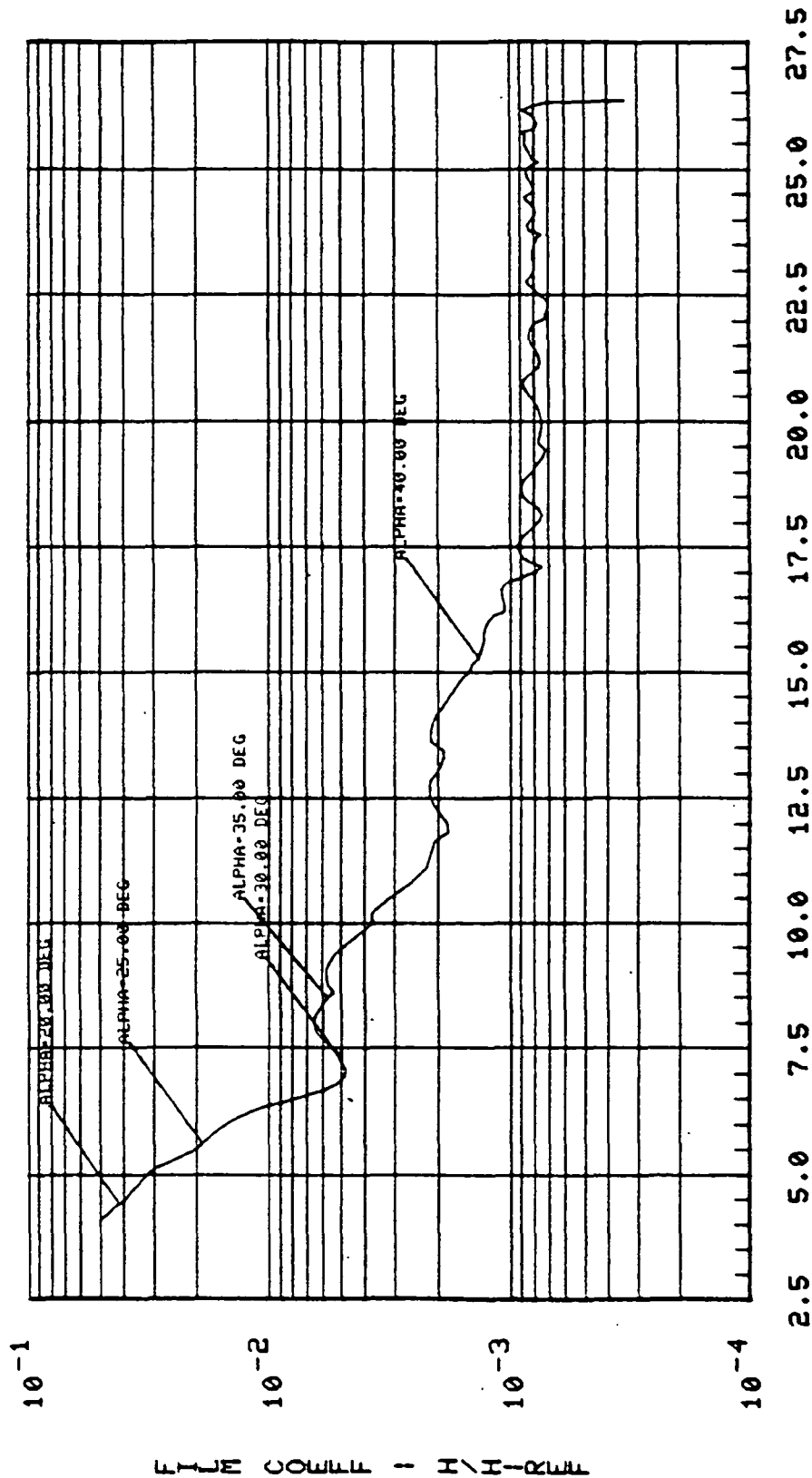
U07T9313A/H-FEF 150-1350 SEC



06/19/84  
BASE TIME - 27698591.000 SEC.

# STS-5 (107 FT LENGTH CL X/L=0.298) FLIGHT PARAMETER COMPARIS

007192134/H-PEF 150-1350 SEC

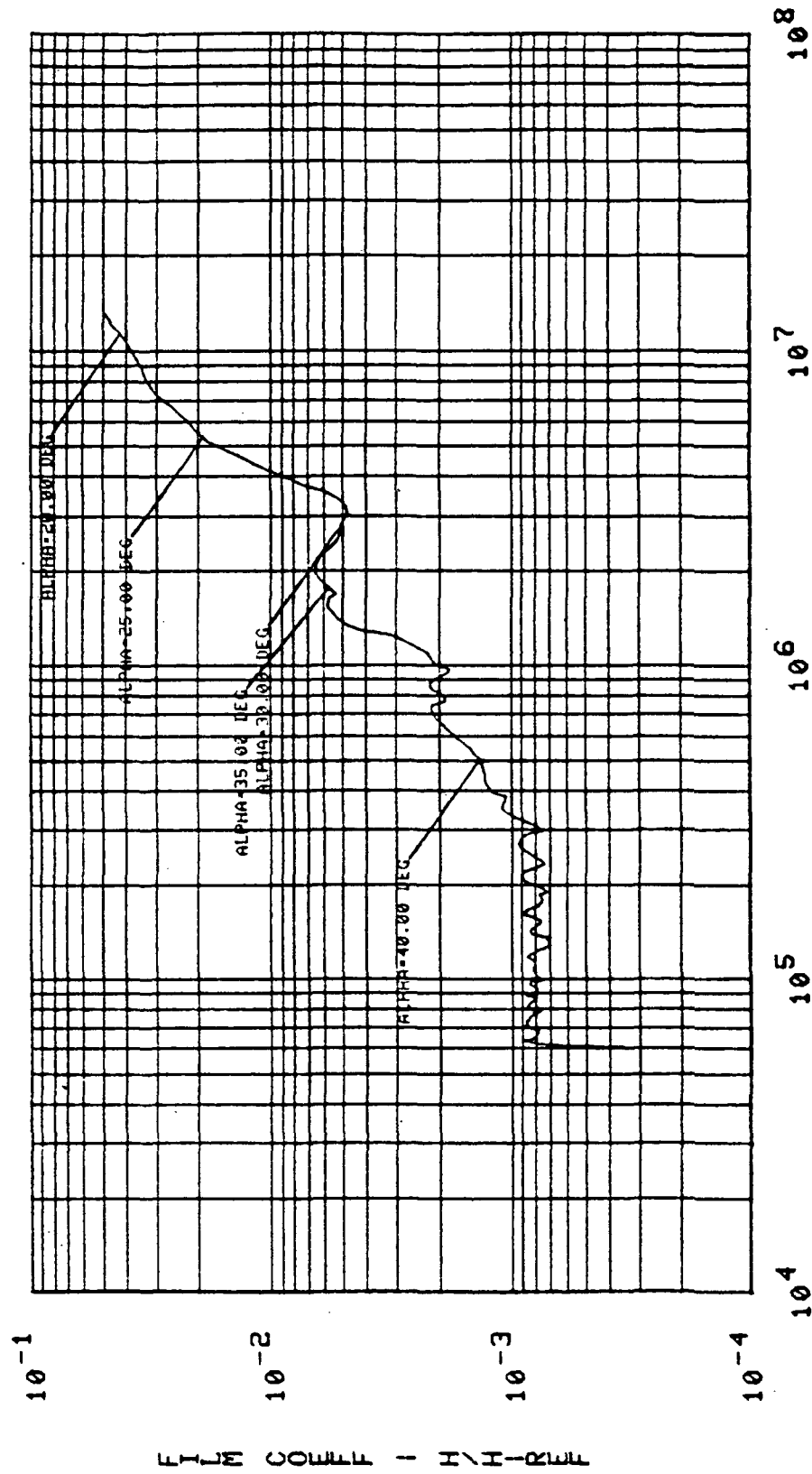


FLIGHT COMPARE - H/H-REF



# STS-5 (107 FT LENGTH CL X/L=0.298) FLIGHT PARAMETER COMPARIS

U87T9219M/H-REF 150-1350 SEC



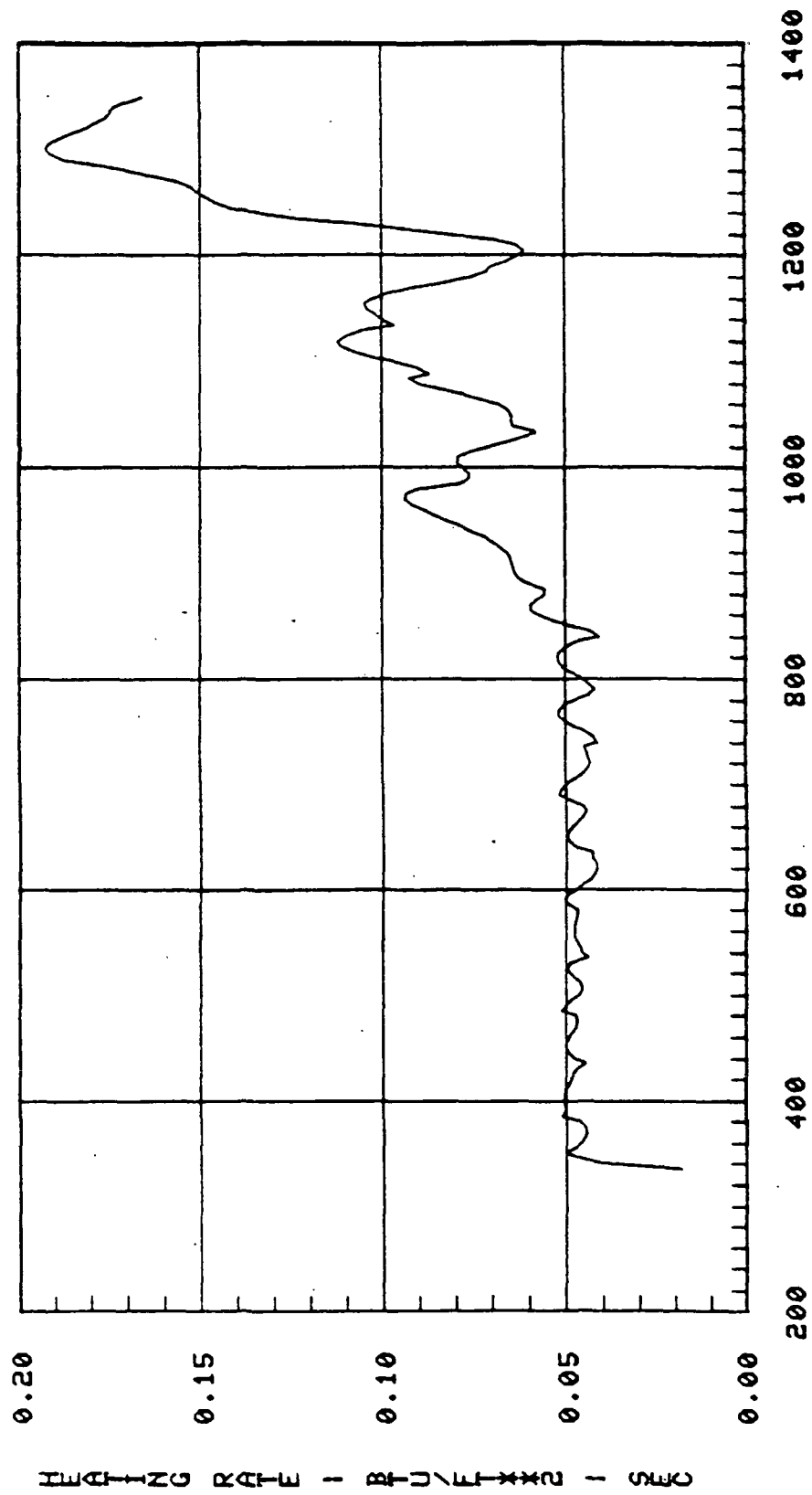
REYNOLDS NUMBER (NS)

06/19/84

BASE TIME - 27698591.000 SEC.

# STS-5 (107 FT LENGTH CL $X/L=0.298$ ) FLIGHT PARAMETER COMPARIS

U07T98194

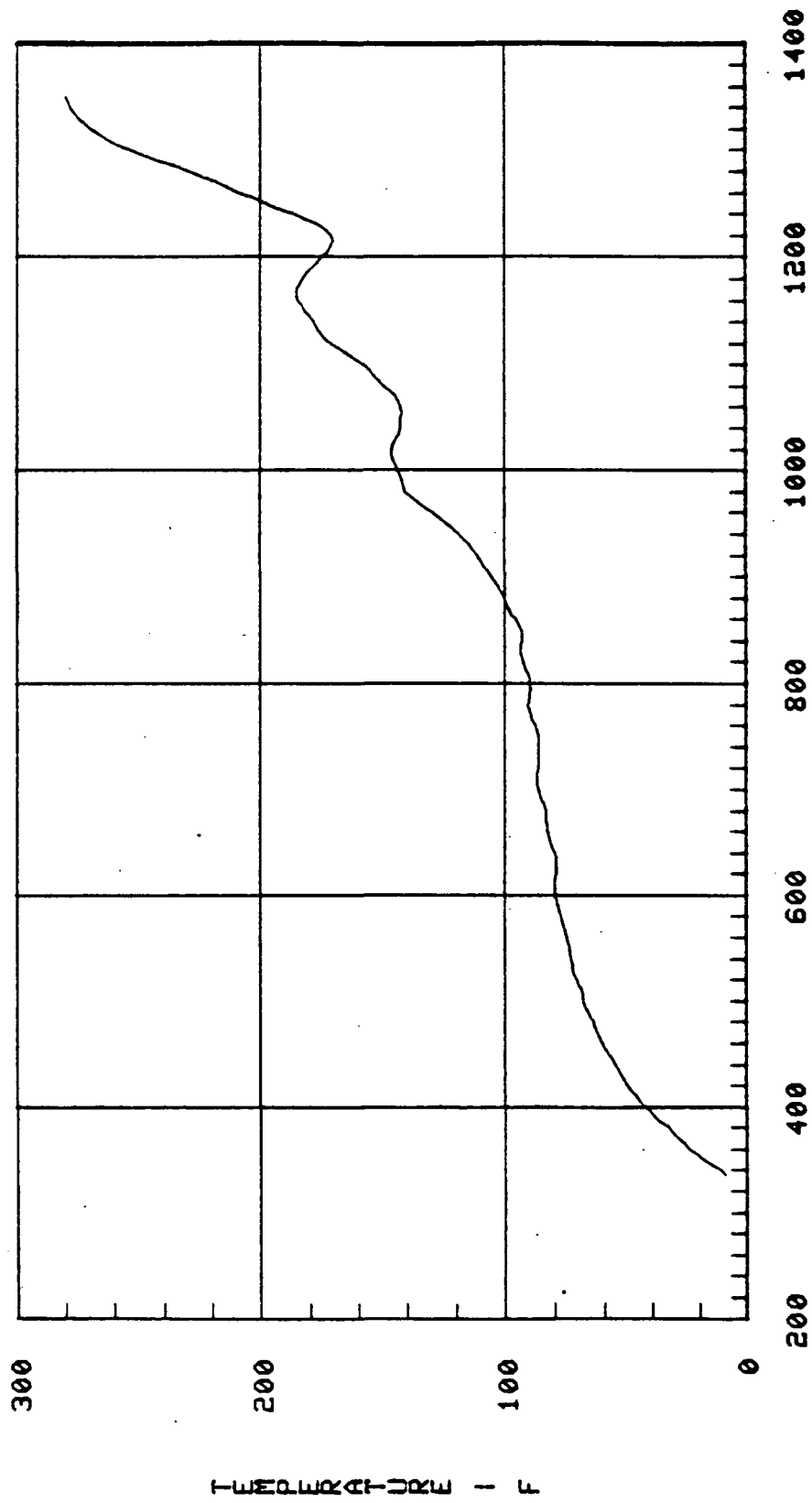


TIME - SECONDS

06/18/84

# STS-5 (107 FT LENGTH CL X/L=0.298) FLIGHT PARAMETER COMPARIS

U07T9819H



TIME - SECONDS

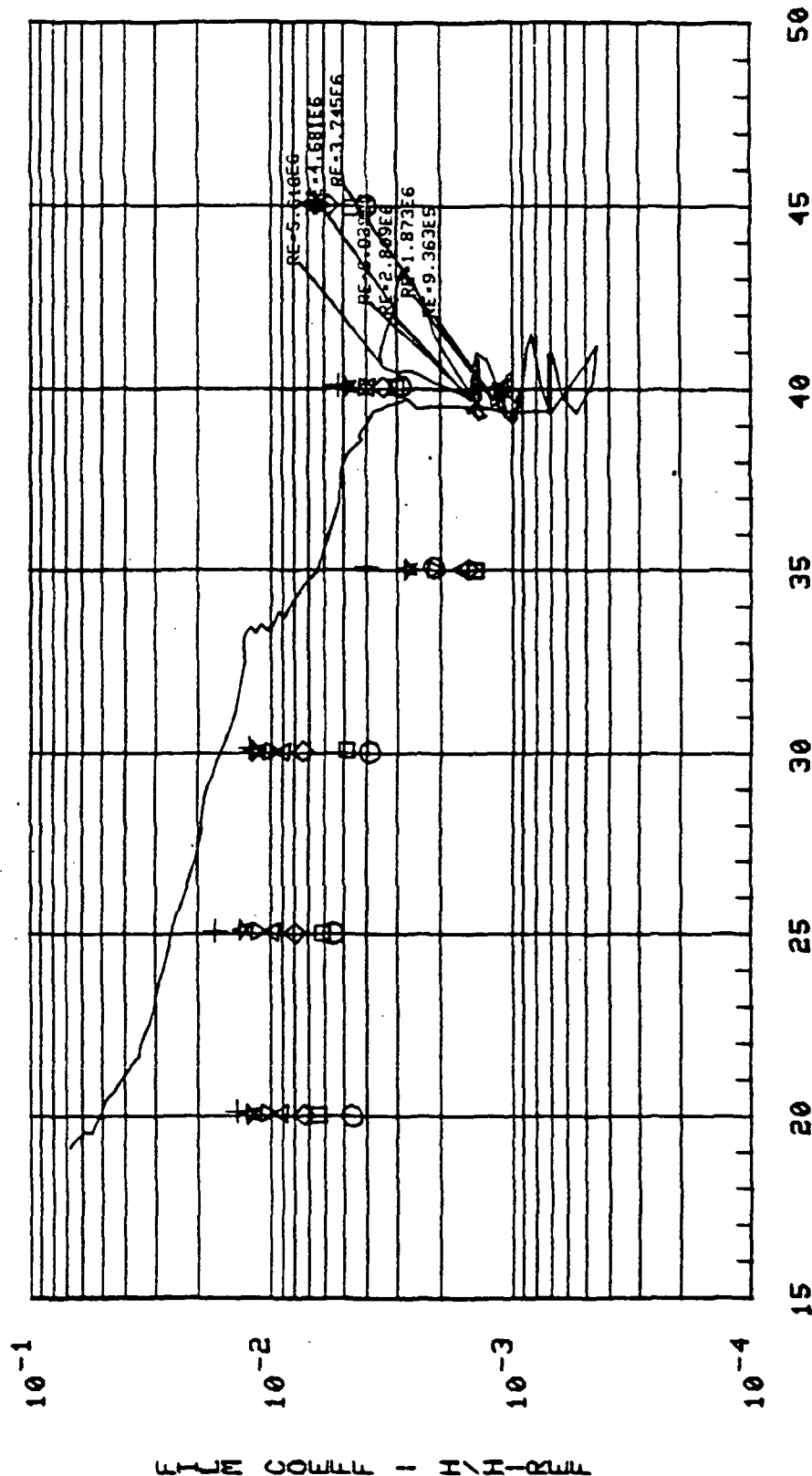
06/19/84

# STS-3 (107 FT LENGTH CL X/L=0.398) FLIGHT PARAMETER COMPARIS

U07T32264-H-REF 200-1380 SEC

OH39 0.0175 SCALE RE - 0.5 E06  
 OH39 0.0175 SCALE RE - 1.0 E06  
 OH39 0.0175 SCALE RE - 1.5 E06  
 OH39 0.0175 SCALE RE - 2.0 E06  
 OH39 0.0175 SCALE RE - 2.5 E06  
 OH39 0.0175 SCALE RE - 3.0 E06  
 OH39 0.0175 SCALE RE - 3.7 E06

O  
 □  
 △  
 ×  
 +



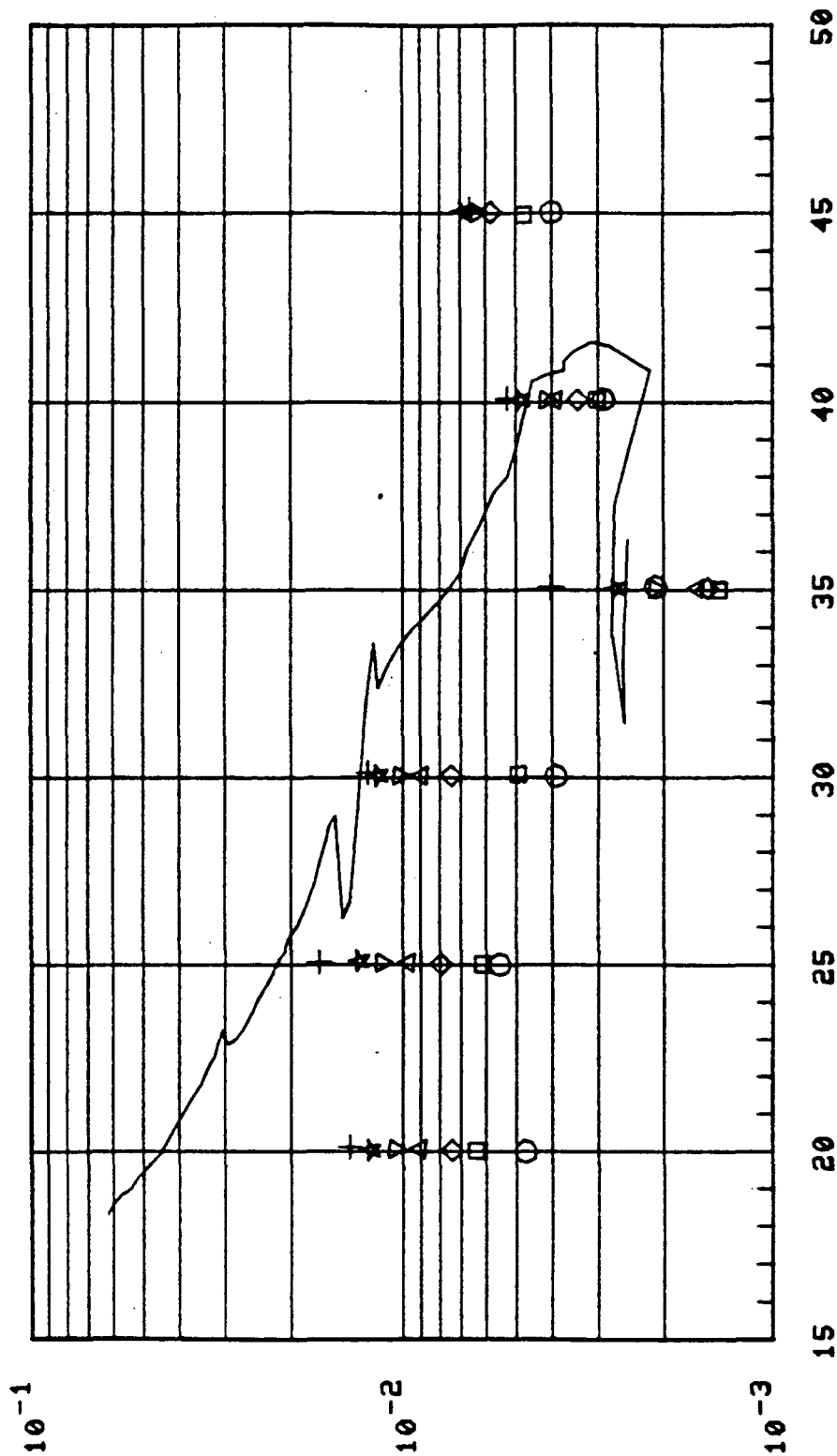
ANGLE-OF-ATTACK - DEG  
 06/18/84  
 BASE TIME - 07745684.000 SEC.

# STS-4 (107 FT LENGTH CL X/L=0.398) FLIGHT PARAMETER COMPARIS

007T9226H/H-PHF 965-1300 SEC

OH39 0.0175 SCALE RE - 0.5 E06  
 OH39 0.0175 SCALE RE - 1.0 E06  
 OH39 0.0175 SCALE RE - 1.5 E06  
 OH39 0.0175 SCALE RE - 2.0 E06  
 OH39 0.0175 SCALE RE - 2.5 E06  
 OH39 0.0175 SCALE RE - 3.0 E06  
 OH39 0.0175 SCALE RE - 3.7 E06

○ □ × △ +  
 ○ □ × △ +



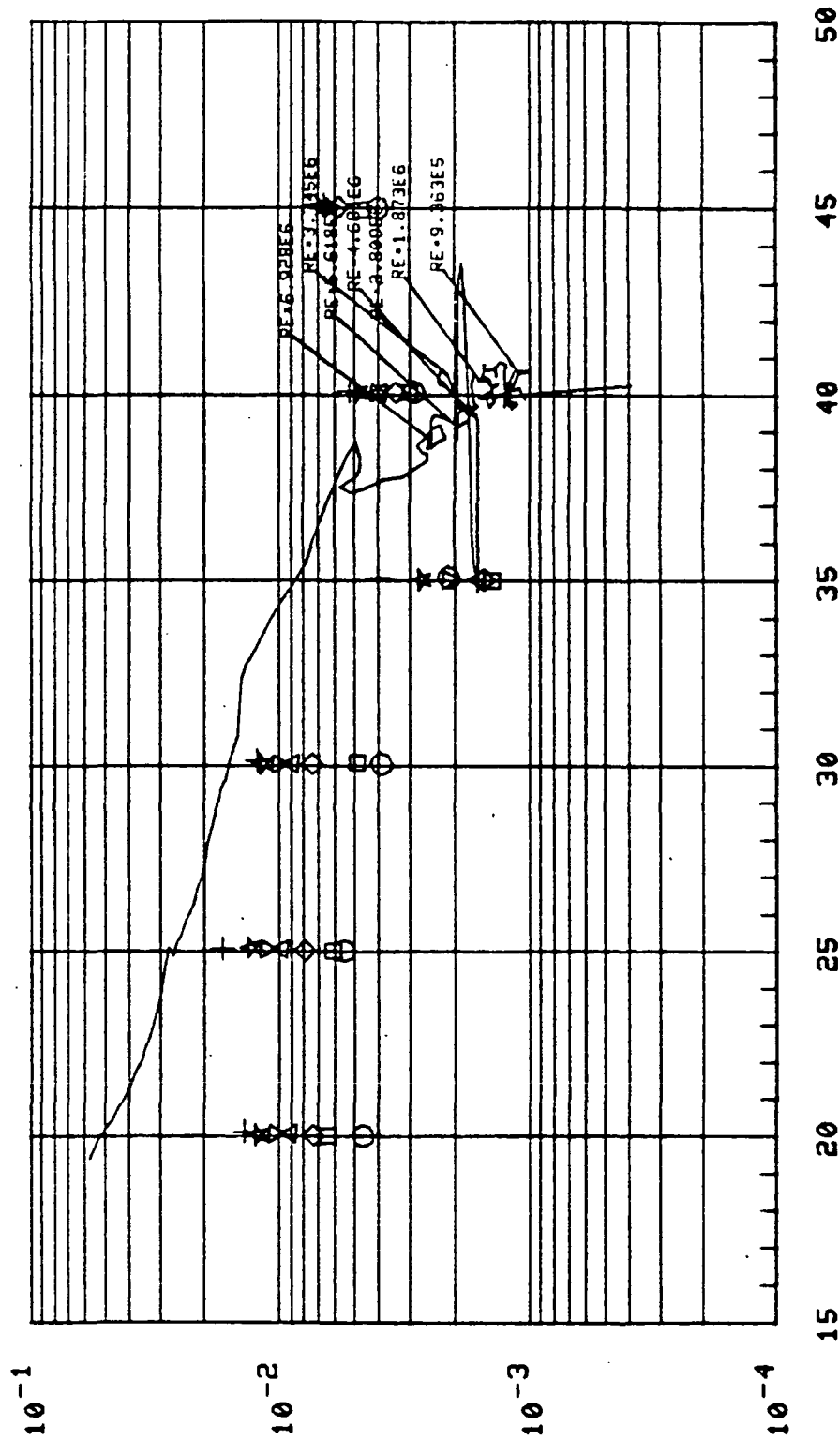
FLIGHT COEFF - H/H-PHF

# STS-5 (107 FT LENGTH CL X/L=0.398) FLIGHT PARAMETER COMPARIS

U07T9226A/H-REF 150-1350 SEC

OH39 0.0175 SCALE RE • 0.5 E06  
 OH39 0.0175 SCALE RE • 1.0 E06  
 OH39 0.0175 SCALE RE • 1.5 E06  
 OH39 0.0175 SCALE RE • 2.0 E06  
 OH39 0.0175 SCALE RE • 2.5 E06  
 OH39 0.0175 SCALE RE • 3.0 E06  
 OH39 0.0175 SCALE RE • 3.7 E06

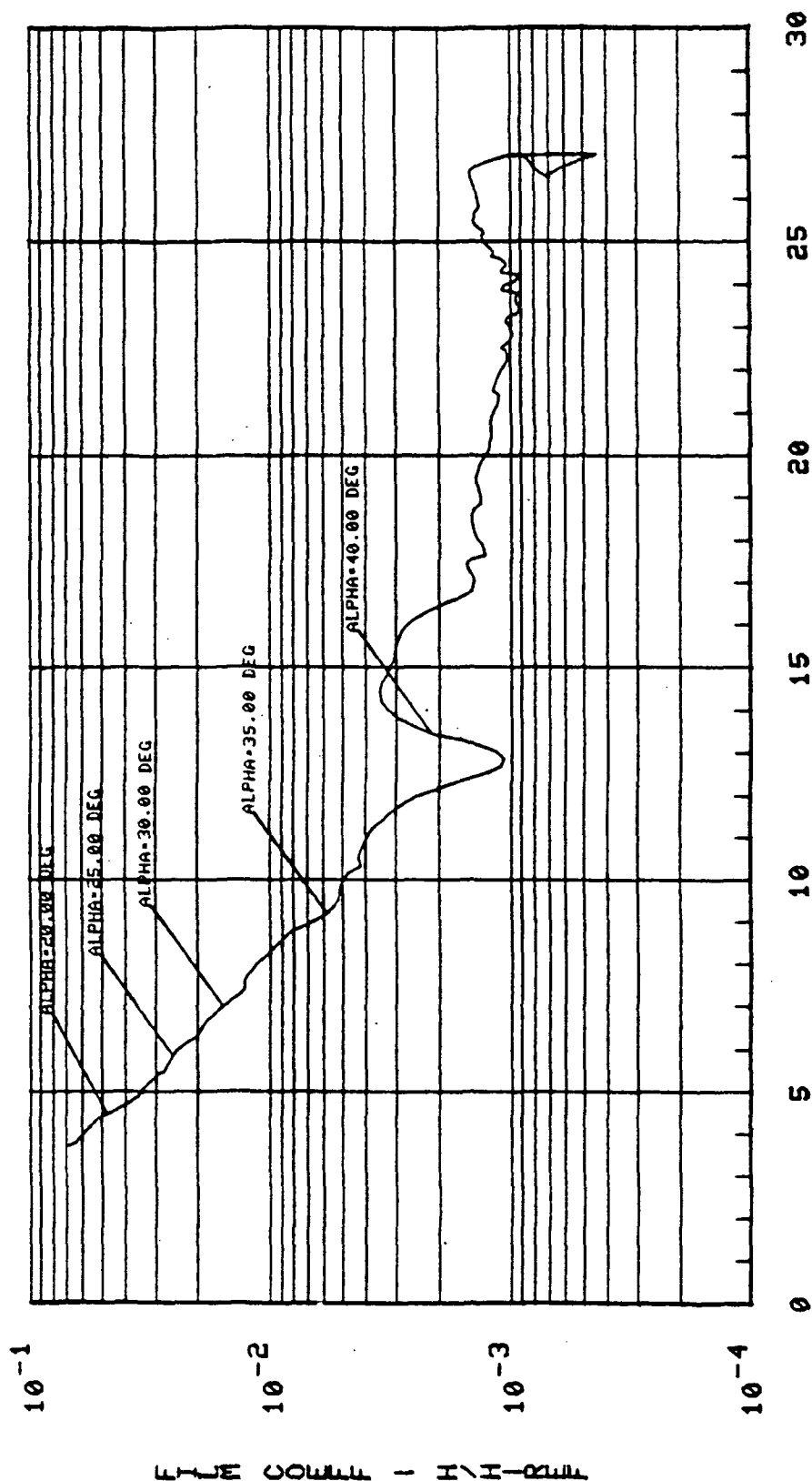
○ × ◇ △ ★ +



FLY CODE - H/H-REF

# STS-3 (107 FT LENGTH CL X/L=0.398) FLIGHT PARAMETER COMPARIS

U07T92264/H-REF 200-1380 SEC

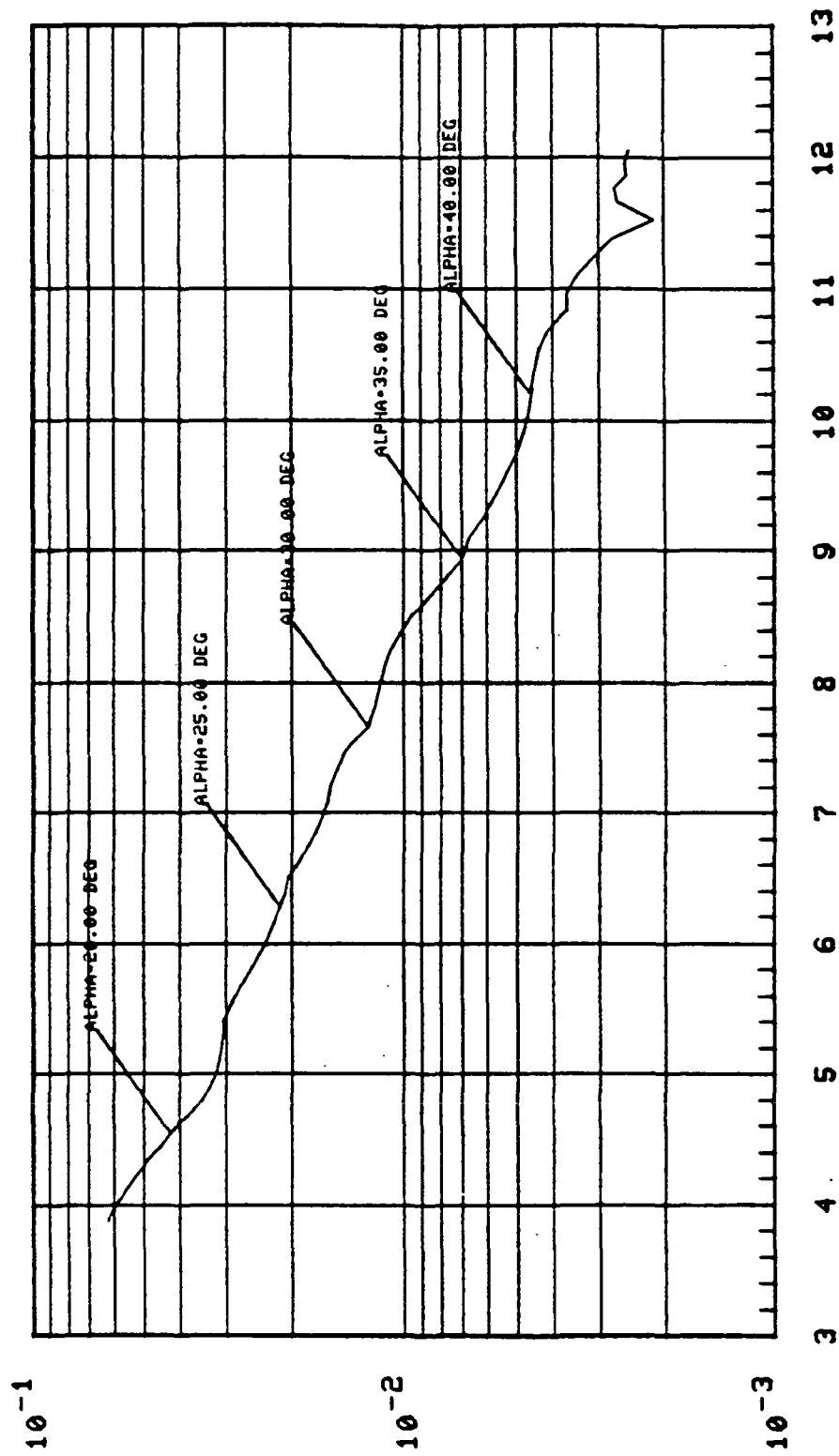


06/18/84  
BASE TIME - 07745684.000 SEC.

MACH NUMBER

# STS-4 (107 FT LENGTH CL X/L=0.398) FLIGHT PARAMETER COMPARIS

U07T98264/H-REF 965-1300 SEC



LIFT COEFF - H/H-REF

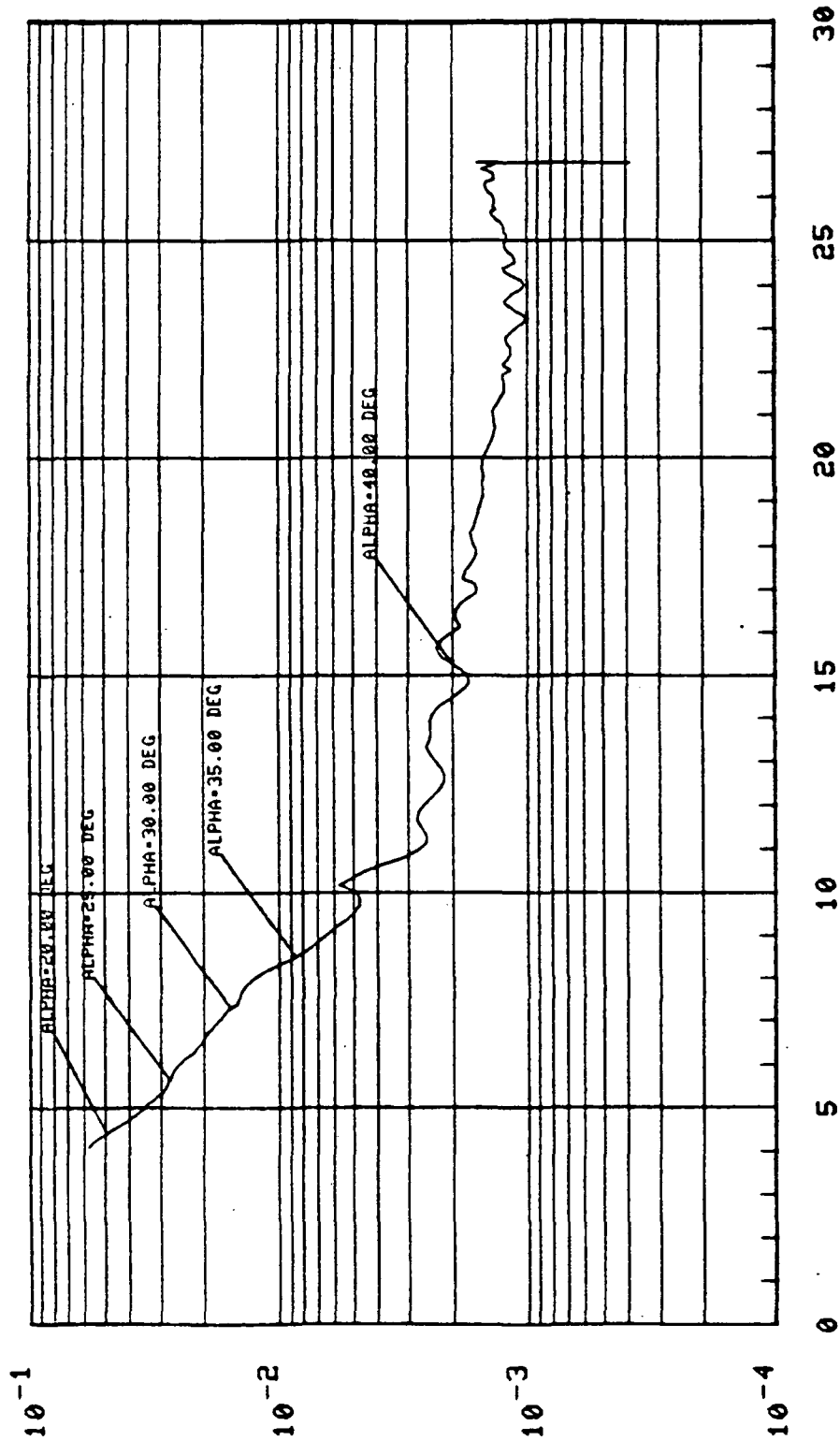
06/18/84  
BASE TIME - 16040423.000 SEC.

MACH NUMBER



# STS-5 (107 FT LENGTH CL $X/L=0.398$ ) FLIGHT PARAMETER COMPARIS

U0719826A/H-REF 150-1350 SEC

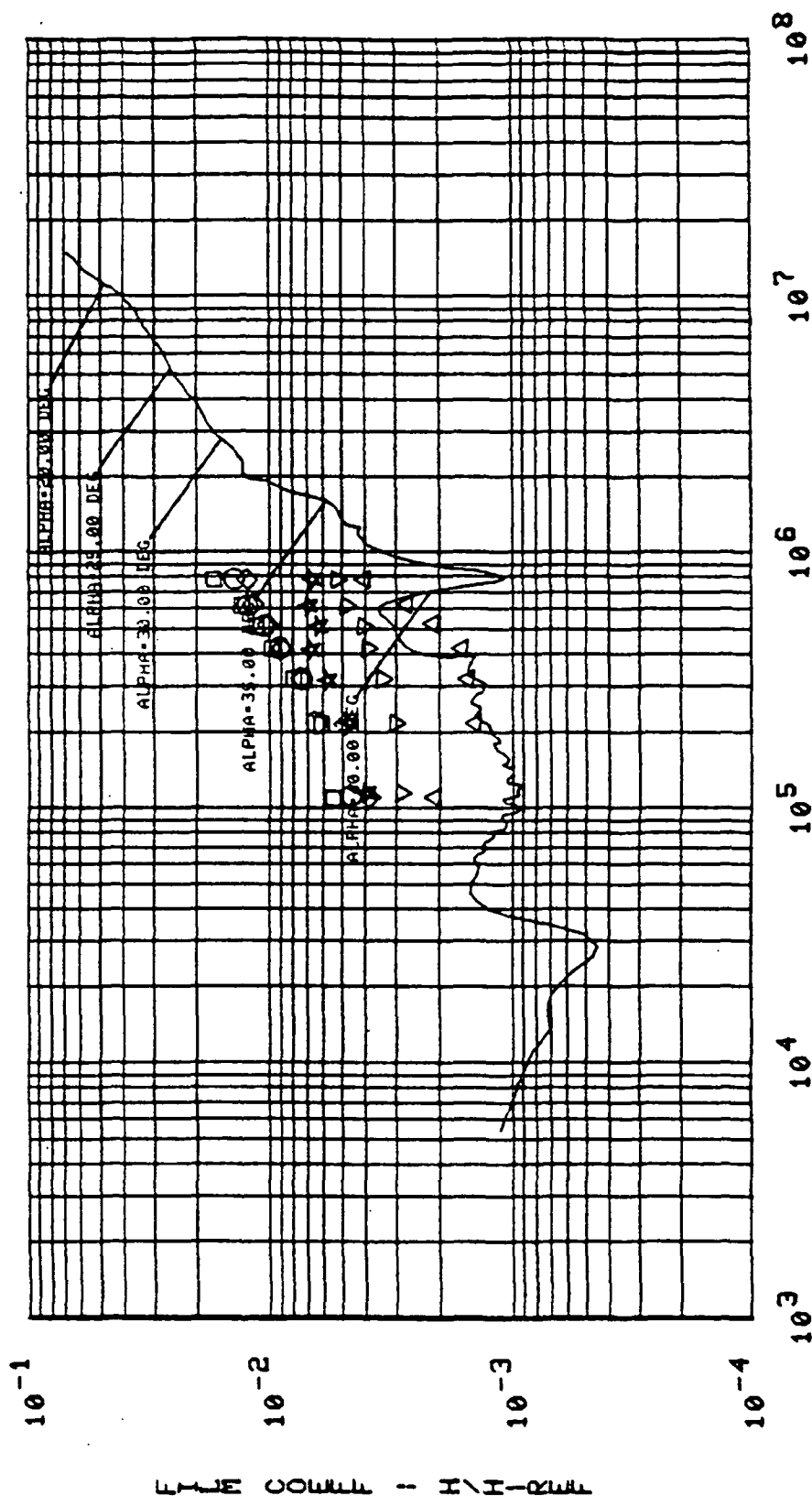


FILM COVER - H/H-REF

# STS-3 (107 FT LENGTH CL X/L=0.398) FLIGHT PARAMETER COMPARIS

O439 ALPHA - 20 DEGREES  
 Q439 ALPHA - 25 DEGREES  
 Q439 ALPHA - 30 DEGREES  
 Q439 ALPHA - 35 DEGREES  
 Q439 ALPHA - 40 DEGREES  
 Q439 ALPHA - 45 DEGREES

007T9226A/H-REF 200-1380 SEC



REYNOLDS NUMBER (NS)

BASE TIME - 07745684.000 SEC.

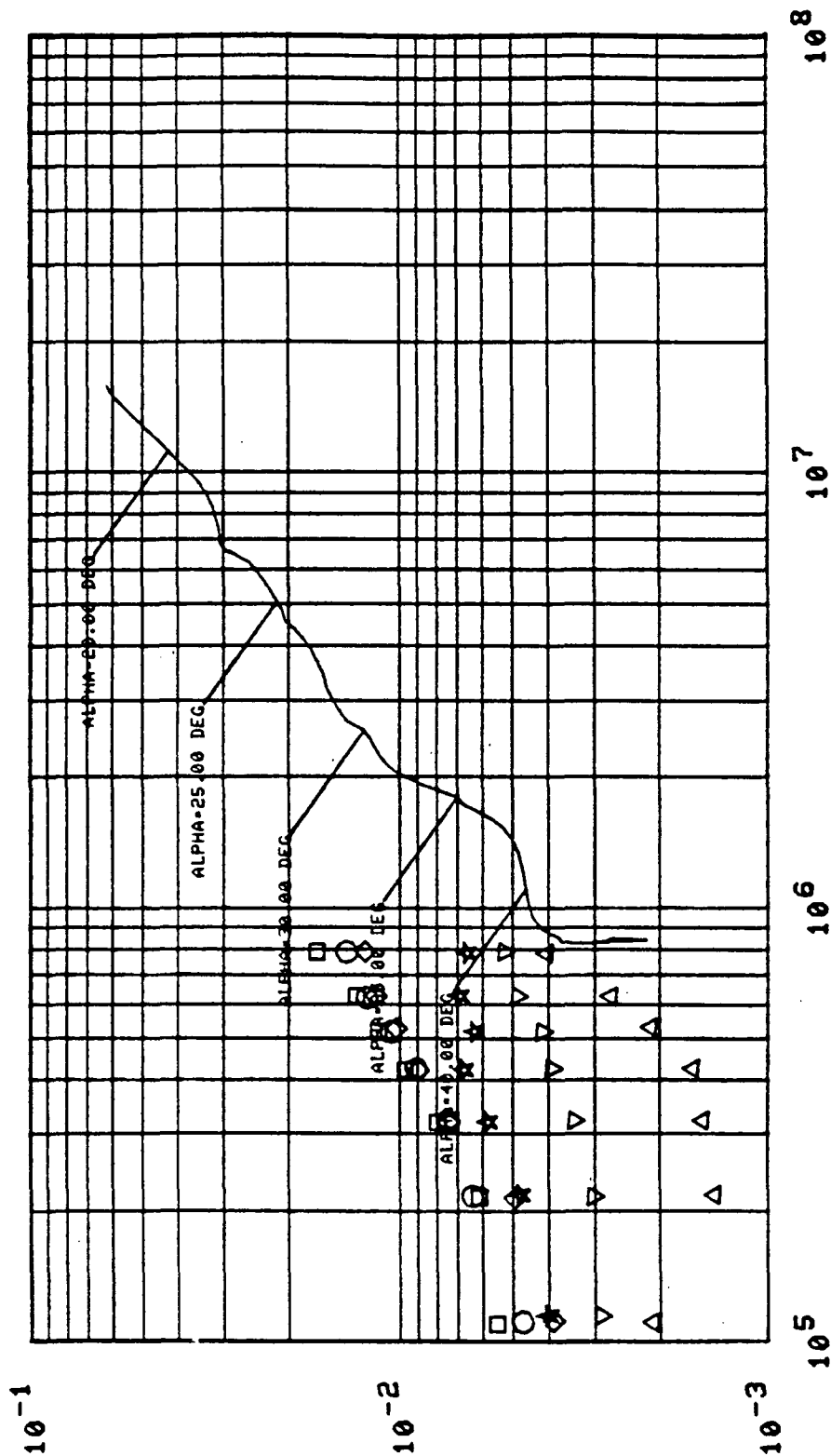
06/18/84

# STS-4 (107 FT LENGTH CL X/L=0.398) FLIGHT PARAMETER COMPARIS

U07T9826A/H-REF 965-1300 SEC

- 0H39 ALPHA - 20 DEGREES
- 0H39 ALPHA - 25 DEGREES
- 0H39 ALPHA - 30 DEGREES
- 0H39 ALPHA - 35 DEGREES
- 0H39 ALPHA - 40 DEGREES
- 0H39 ALPHA - 45 DEGREES

□ ◇ △ ★



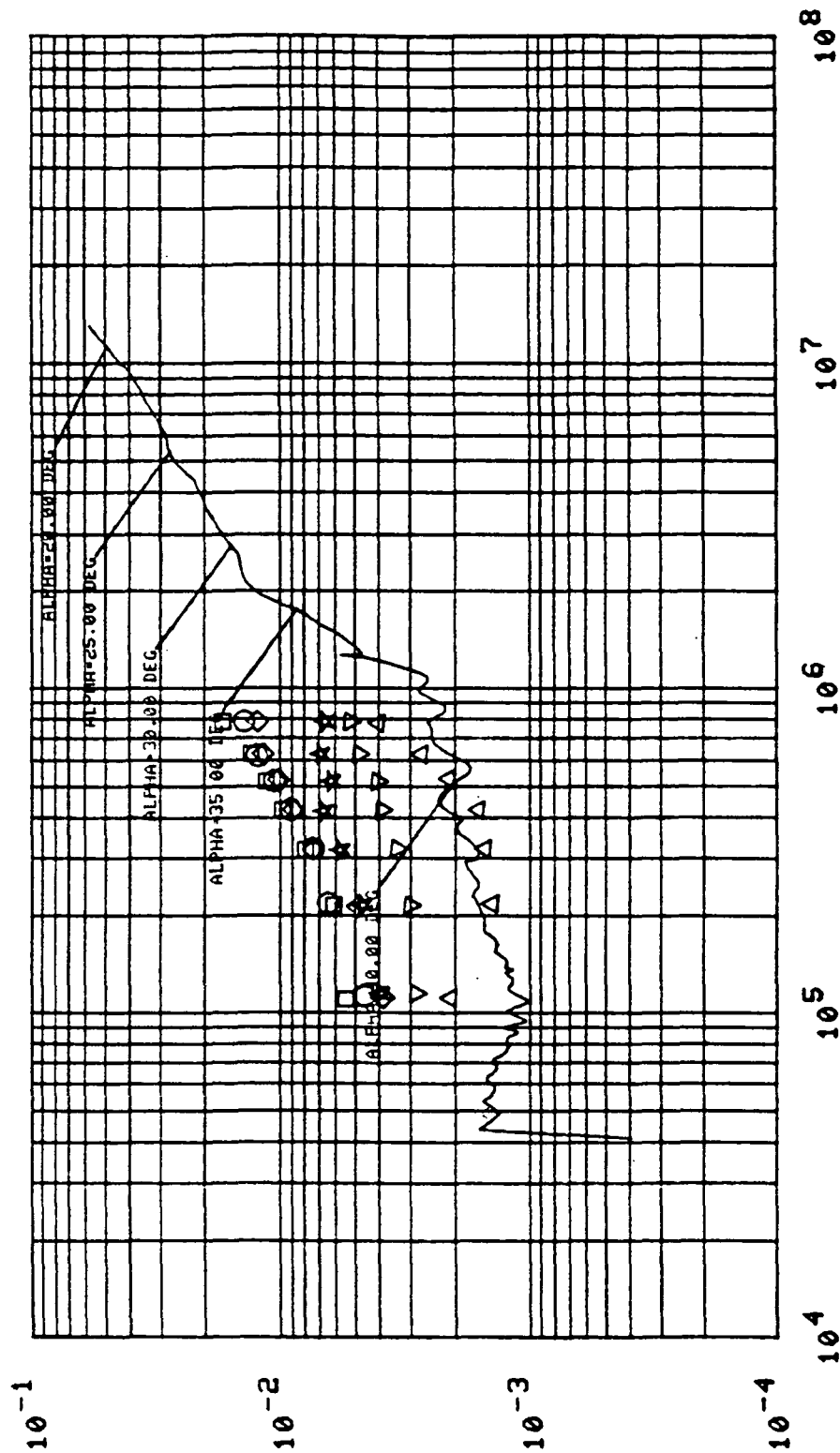
U07T9826A/H-REF

# STS-5 (107 FT LENGTH CL X/L=0.398) FLIGHT PARAMETER COMPARIS

007T9225A/H-REF 150-1350 SEC

- 0H39 ALPHA - 20 DEGREES
- 0H39 ALPHA - 25 DEGREES
- 0H39 ALPHA - 30 DEGREES
- 0H39 ALPHA - 35 DEGREES
- 0H39 ALPHA - 40 DEGREES
- 0H39 ALPHA - 45 DEGREES

□ ○ × △ ★



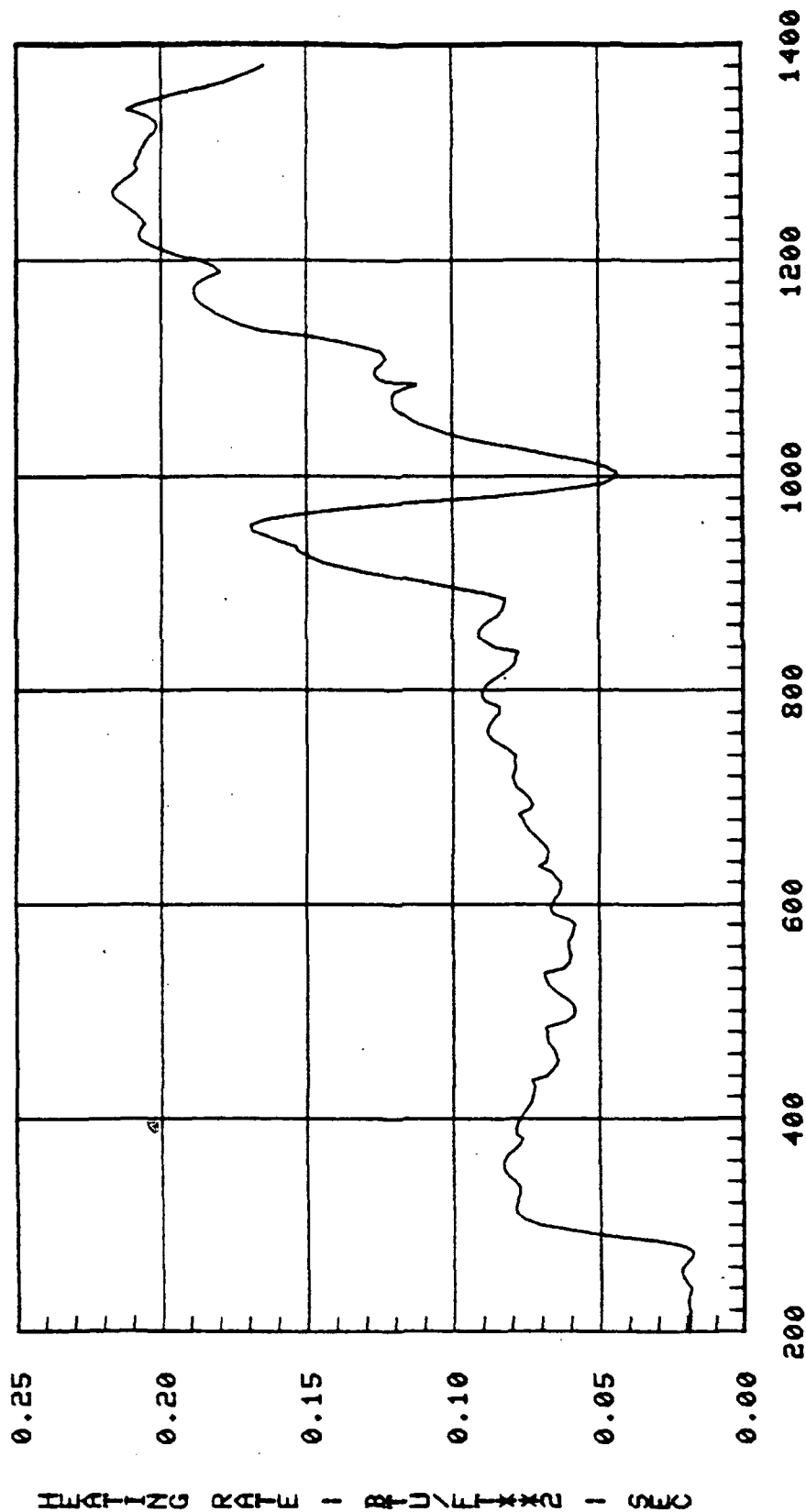
FILM COEFF - H/H-REF

06/19/84  
BASE TIME - 27698501.000 SEC.

REYNOLDS NUMBER (NS)

# STS-3 (107 FT LENGTH CL X/L=0.398) FLIGHT PARAMETER COMPARIS

U07TS8264

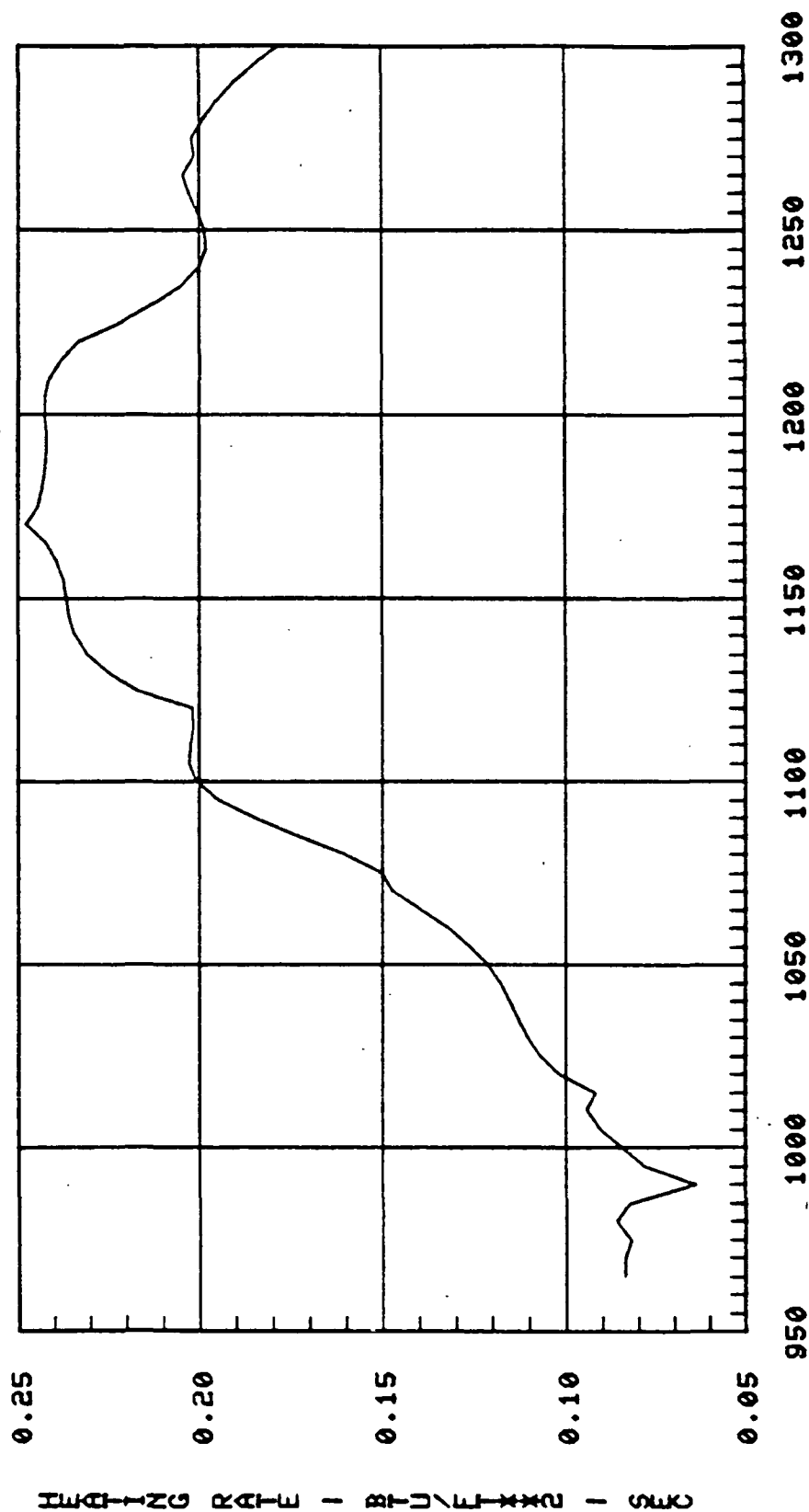


TIME - SECONDS

06/18/84

# STS-4 (107 FT LENGTH CL X/L=0.398) FLIGHT PARAMETER COMPARIS

U07T98264

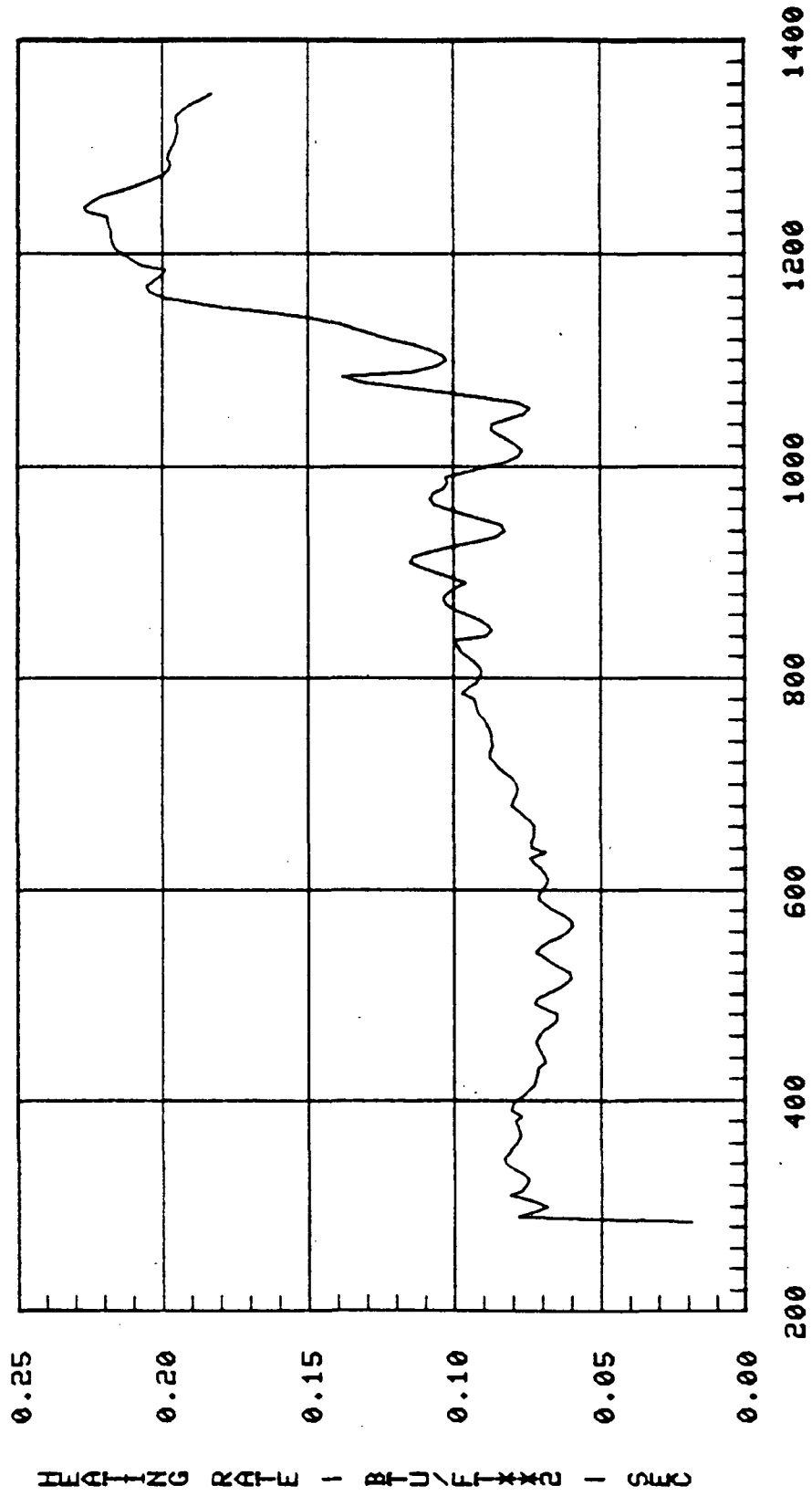


TIME - SECONDS

06/18/84

# STS-5 (107 FT LENGTH CL X/L=0.398) FLIGHT PARAMETER COMPARIS

007T382EA

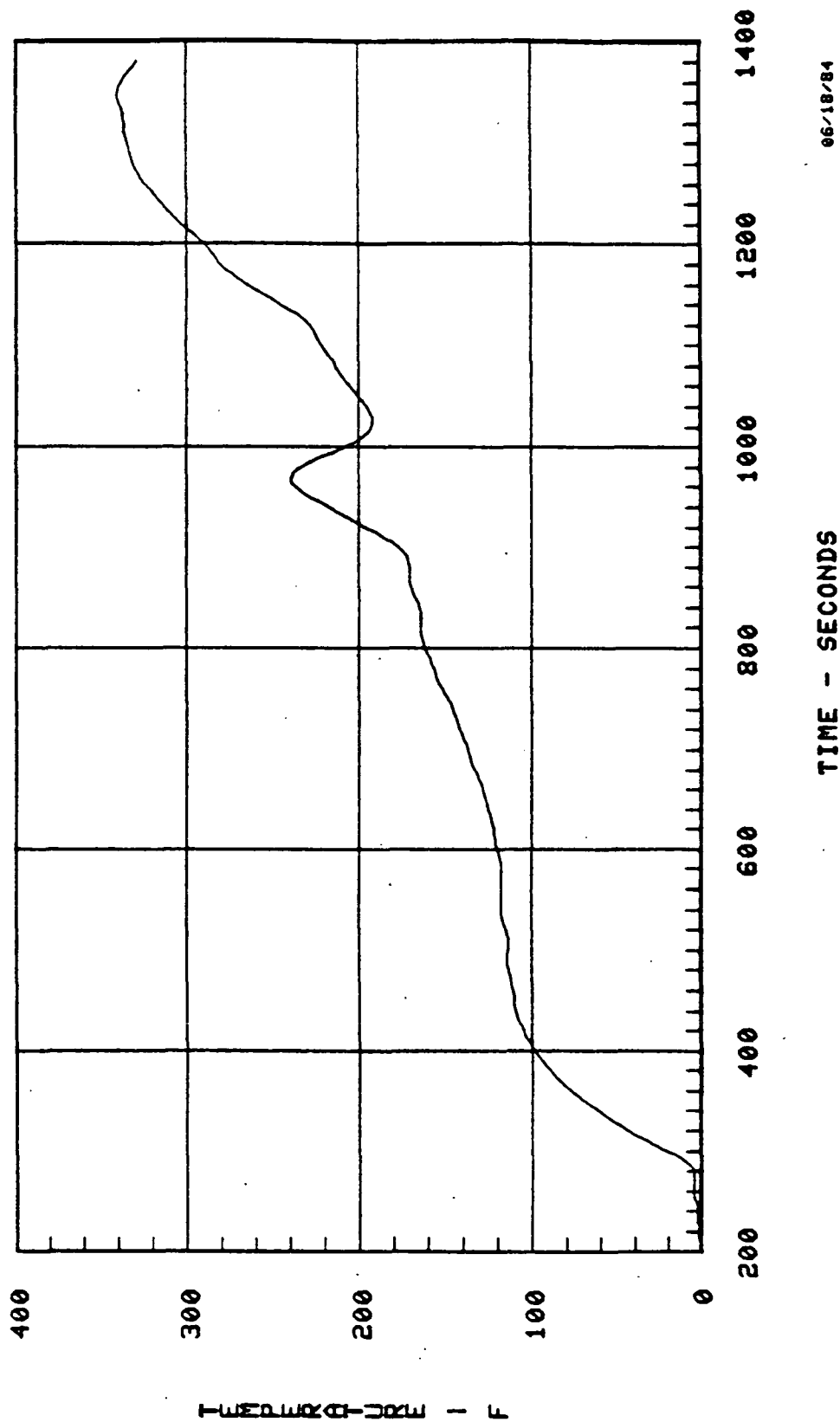


06/19/84

TIME - SECONDS

# STS-3 (107 FT LENGTH CL $X/L=0.398$ ) FLIGHT PARAMETER COMPARIS

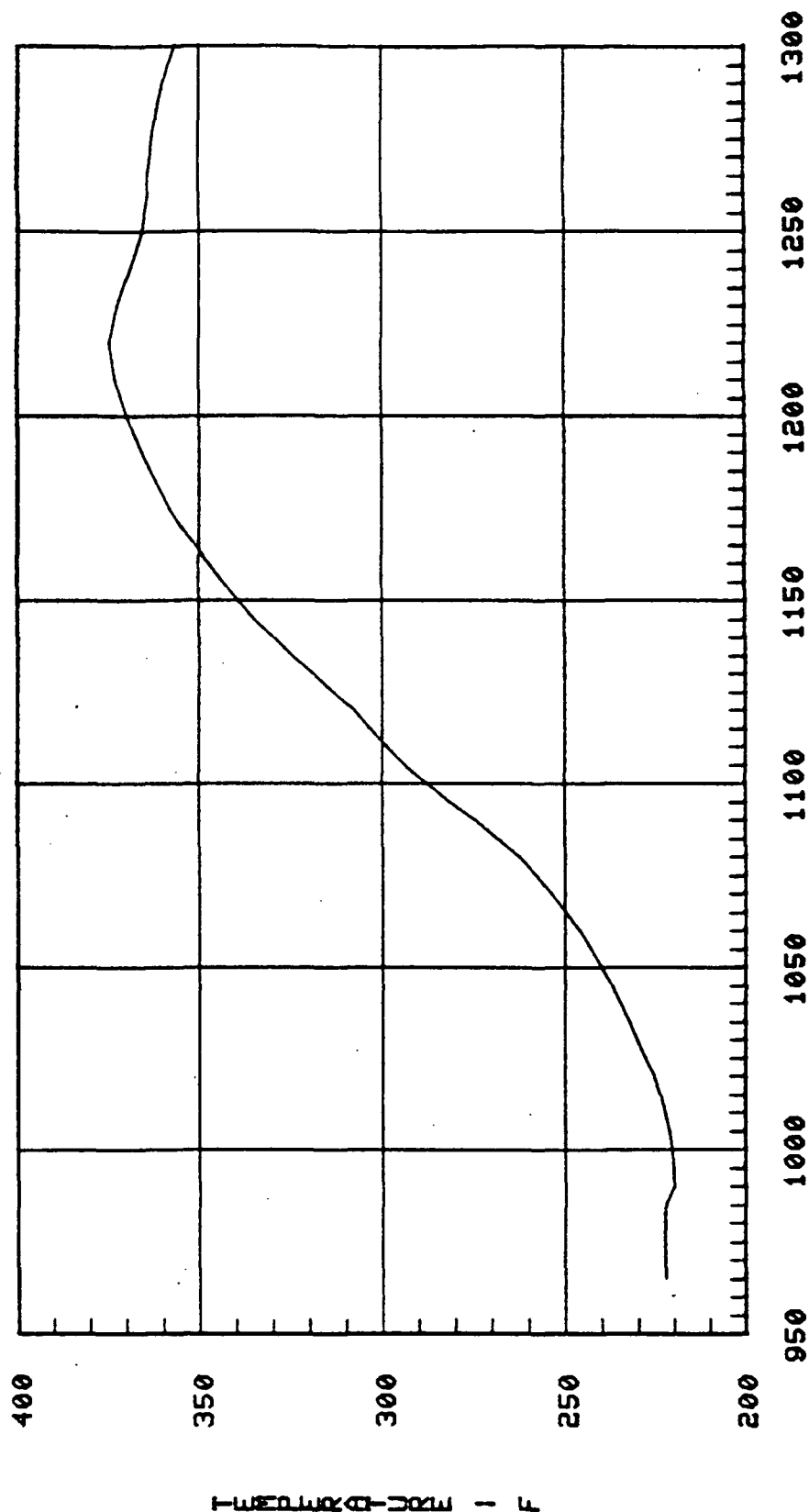
U07T98254





# STS-4 (107 FT LENGTH CL X/L-0.398) FLIGHT PARAMETER COMPARIS

U07T9826A

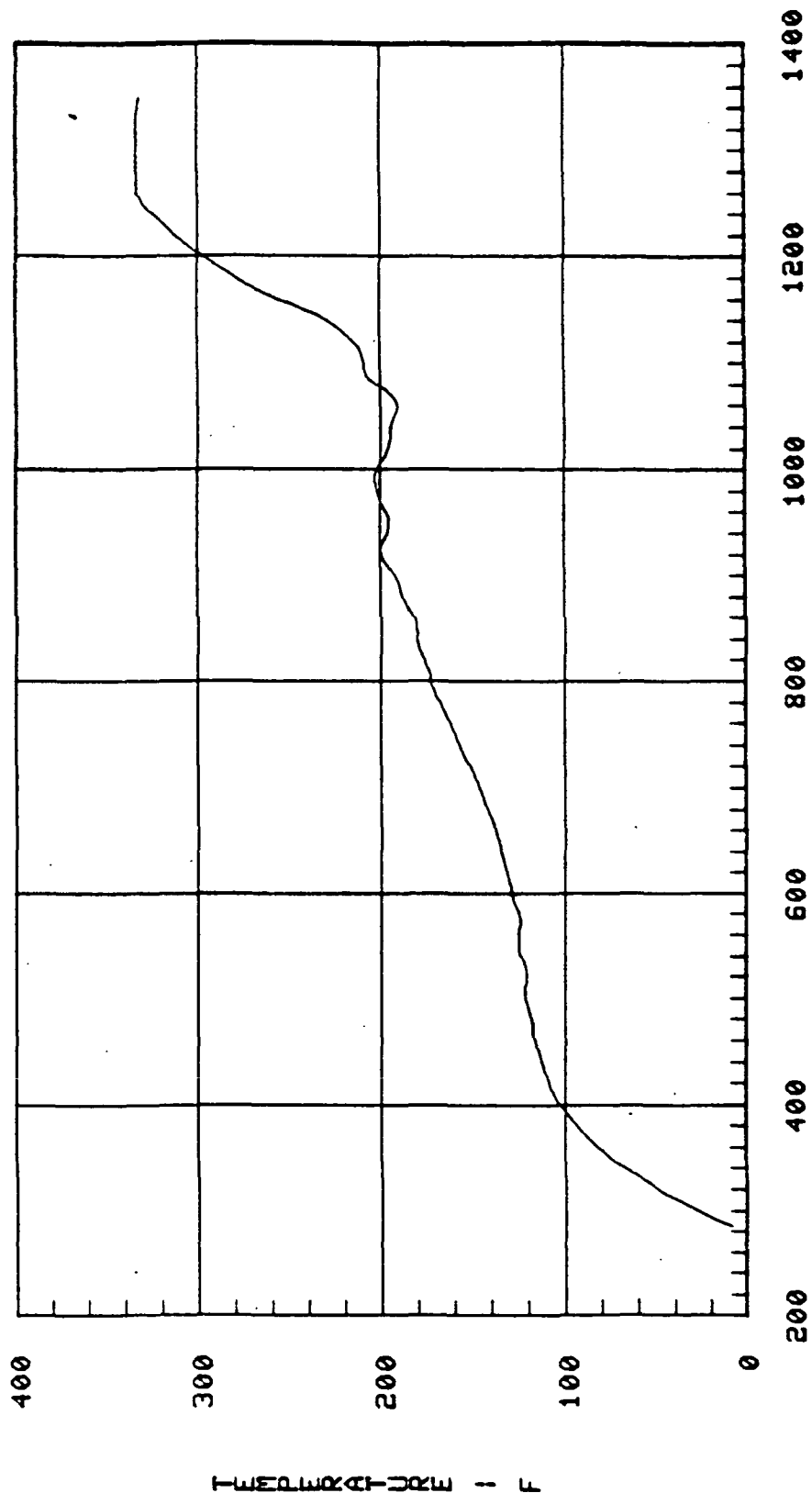


TIME - SECONDS

06/18/84

# STS-5 (107 FT LENGTH CL X/L=0.398) FLIGHT PARAMETER COMPARIS

007T98264



06/19/84

TIME - SECONDS

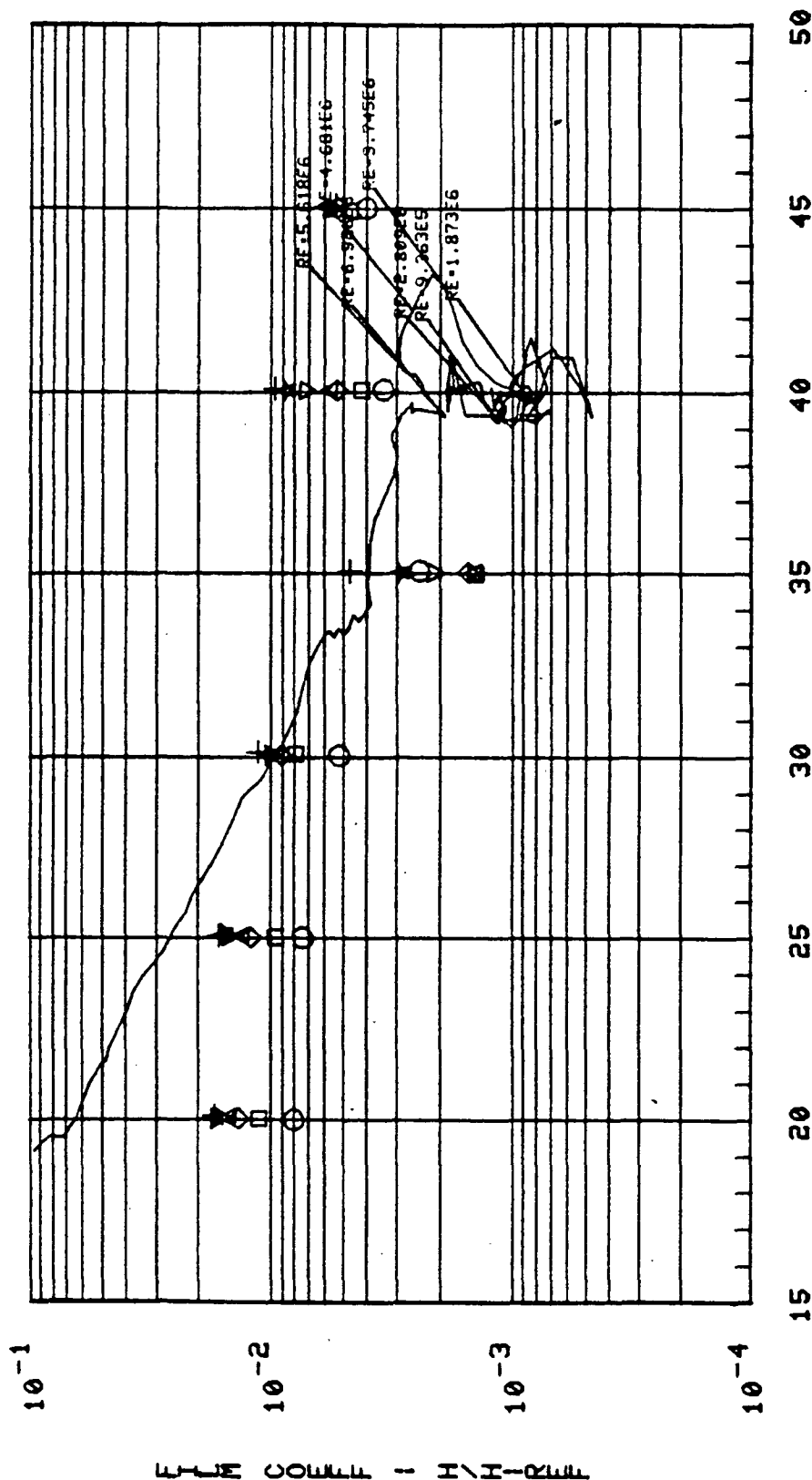
FEET

# STS-3 (107 FT LENGTH CL X/L=0.500) FLIGHT PARAMETER COMPARIS

U07T98324/H-REF 200-1320 SEC

0H39 0.0175 SCALE RE - 0.5 E06  
 0H39 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H39 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

○ □ × △ ★ +



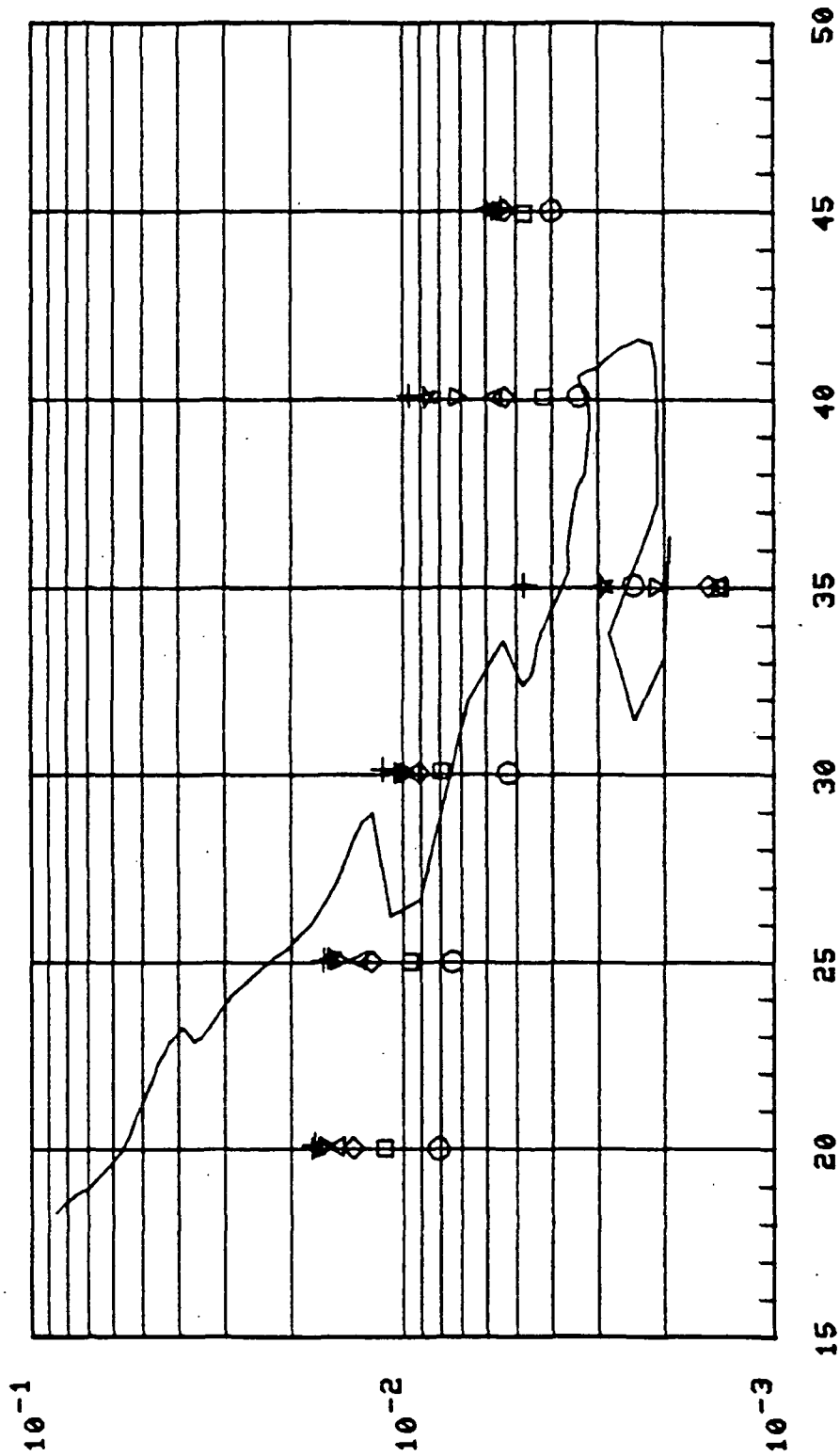
ANGLE-OF-ATTACK - DEG  
 BASE TIME - 07745684.000 SEC.

# STS-4 (107 FT LENGTH CL X/L=0.500) FLIGHT PARAMETER COMPARIS

U07T9832H/H-REF 965-1300 SEC

OH39 0.0175 SCALE RE • 0.5 E06  
 OH39 0.0175 SCALE RE • 1.0 E06  
 OH39 0.0175 SCALE RE • 1.5 E06  
 OH39 0.0175 SCALE RE • 2.0 E06  
 OH39 0.0175 SCALE RE • 2.5 E06  
 OH39 0.0175 SCALE RE • 3.0 E06  
 OH39 0.0175 SCALE RE • 3.7 E06

○ □ ◇ △ ★ +



FLIGHT COMPARE - H/H-REF

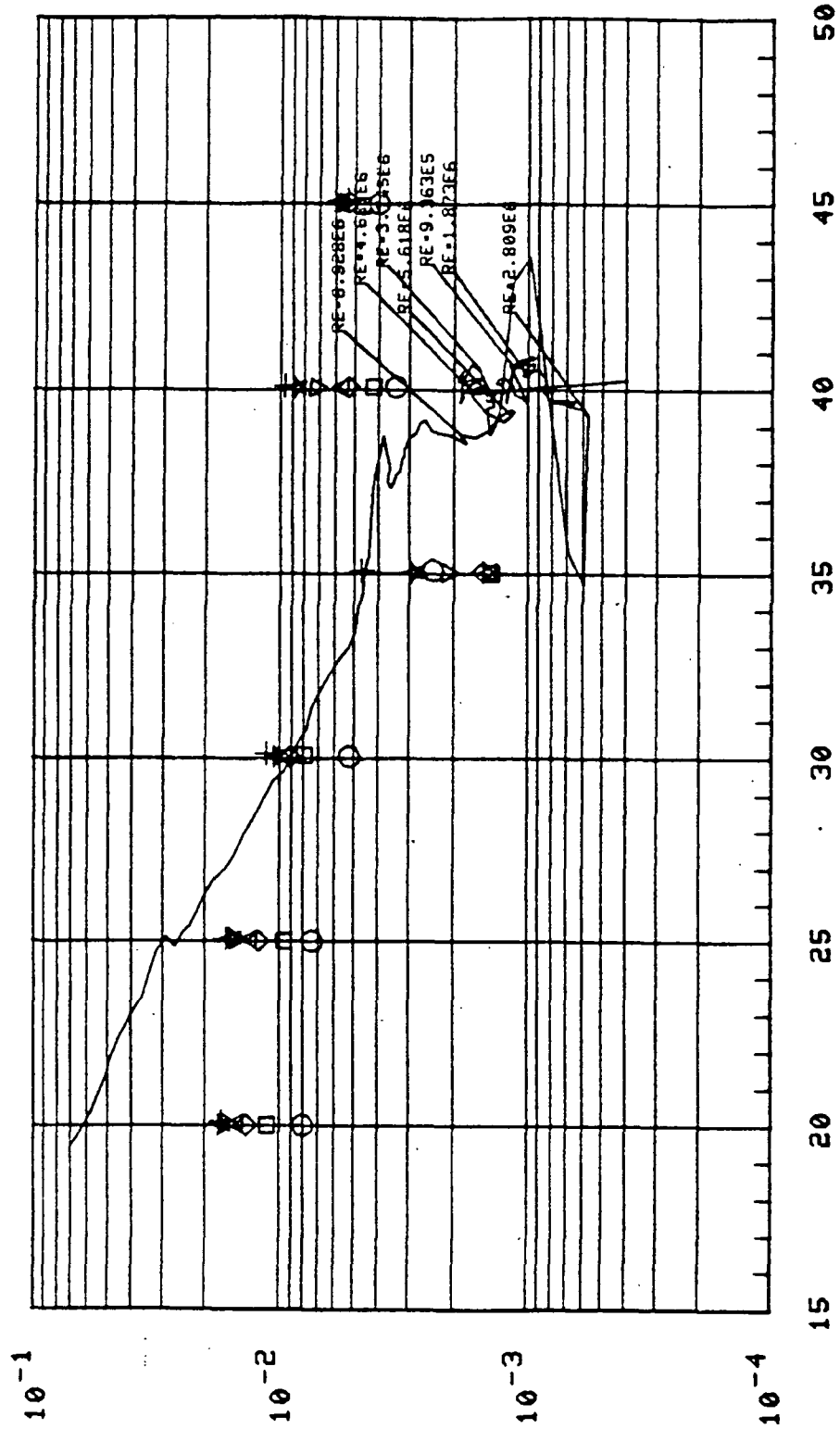
ANGLE-OF-ATTACK - DEG  
 BASE TIME • 16040423.000 SEC.  
 06/18/84

# STS-5 (107 FT LENGTH CL X/L=0.500) FLIGHT PARAMETER COMPARIS

007T9832A/H-REF 150-1350 SEC

0H39 0.0175 SCALE RE \* 0.5 E06  
 0H39 0.0175 SCALE RE \* 1.0 E06  
 0H39 0.0175 SCALE RE \* 1.5 E06  
 0H39 0.0175 SCALE RE \* 2.0 E06  
 0H39 0.0175 SCALE RE \* 2.5 E06  
 0H39 0.0175 SCALE RE \* 3.0 E06  
 0H39 0.0175 SCALE RE \* 3.7 E06

□ ◇ × +  
 ○



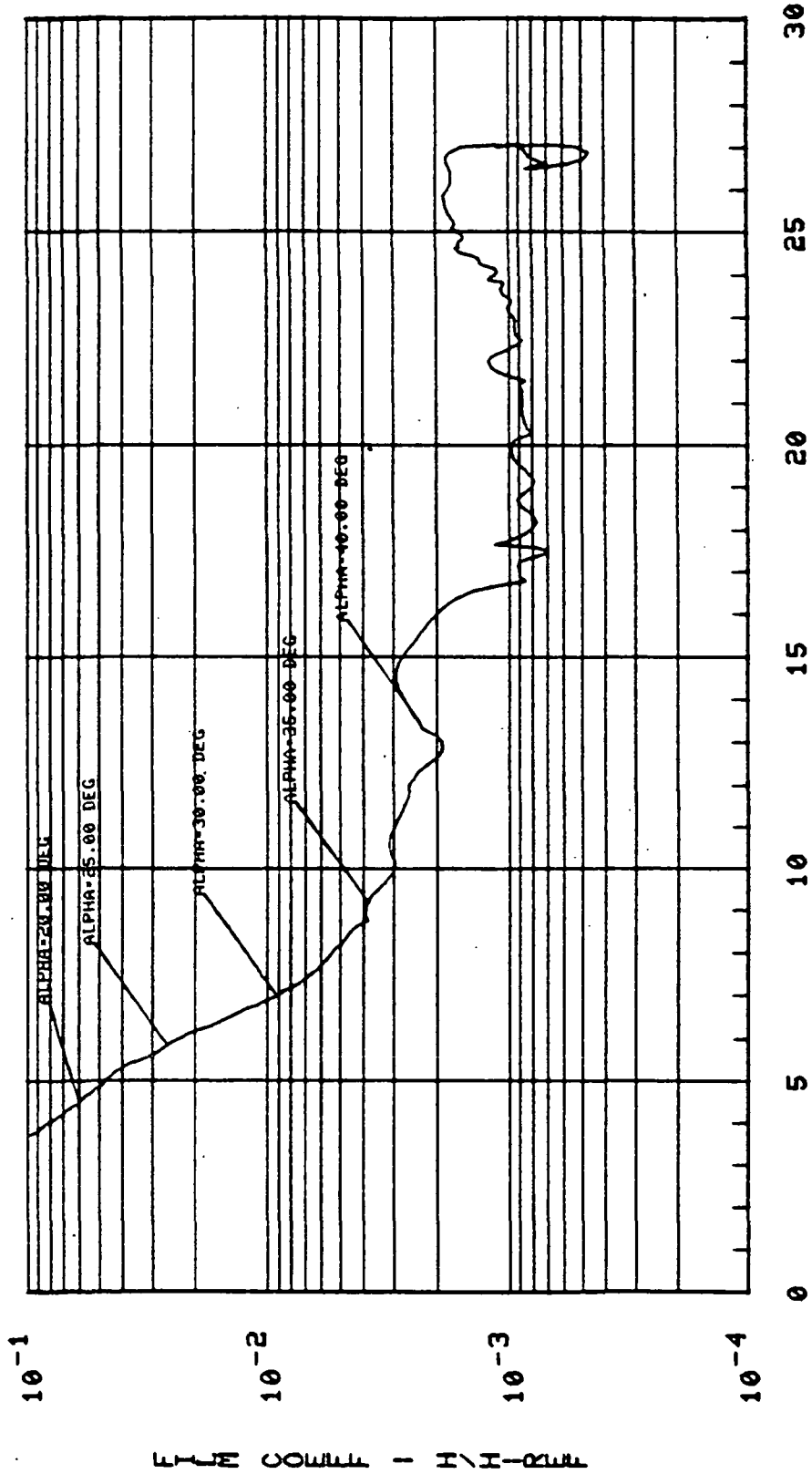
FILM COEFF - H/H-REF

06/19/84  
 BASE TIME \* 27698591.000 SEC.

ANGLE-OF-ATTACK - DEG

# STS-3 (107 FT LENGTH CL X/L=0.500) FLIGHT PARAMETER COMPARIS

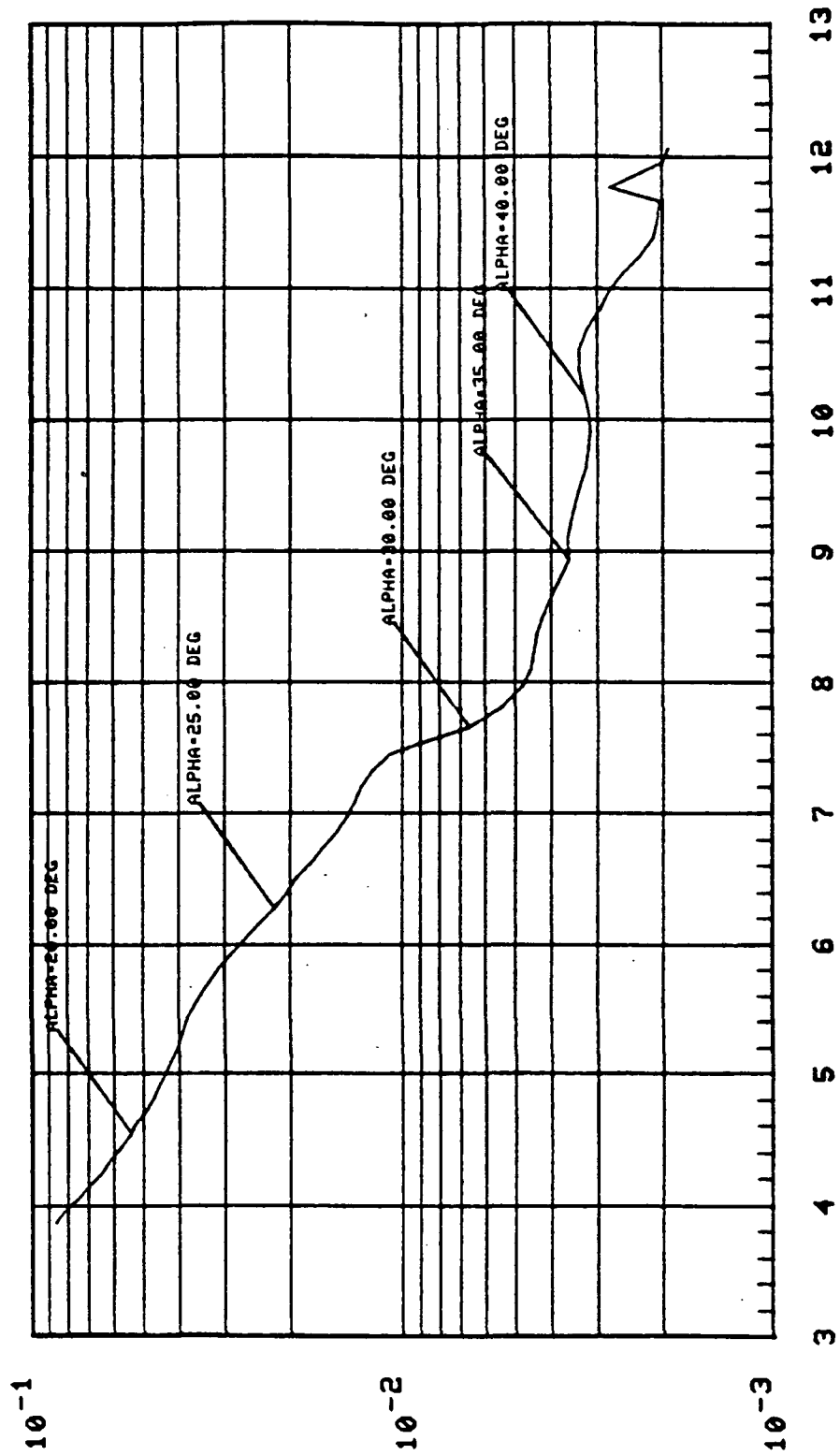
UG7T98324/H-REF 200-1380 SEC



96/18/84  
BASE TIME - 07745684.000 SEC.

# STS-4 (107 FT LENGTH CL X/L=0.500) FLIGHT PARAMETER COMPARIS

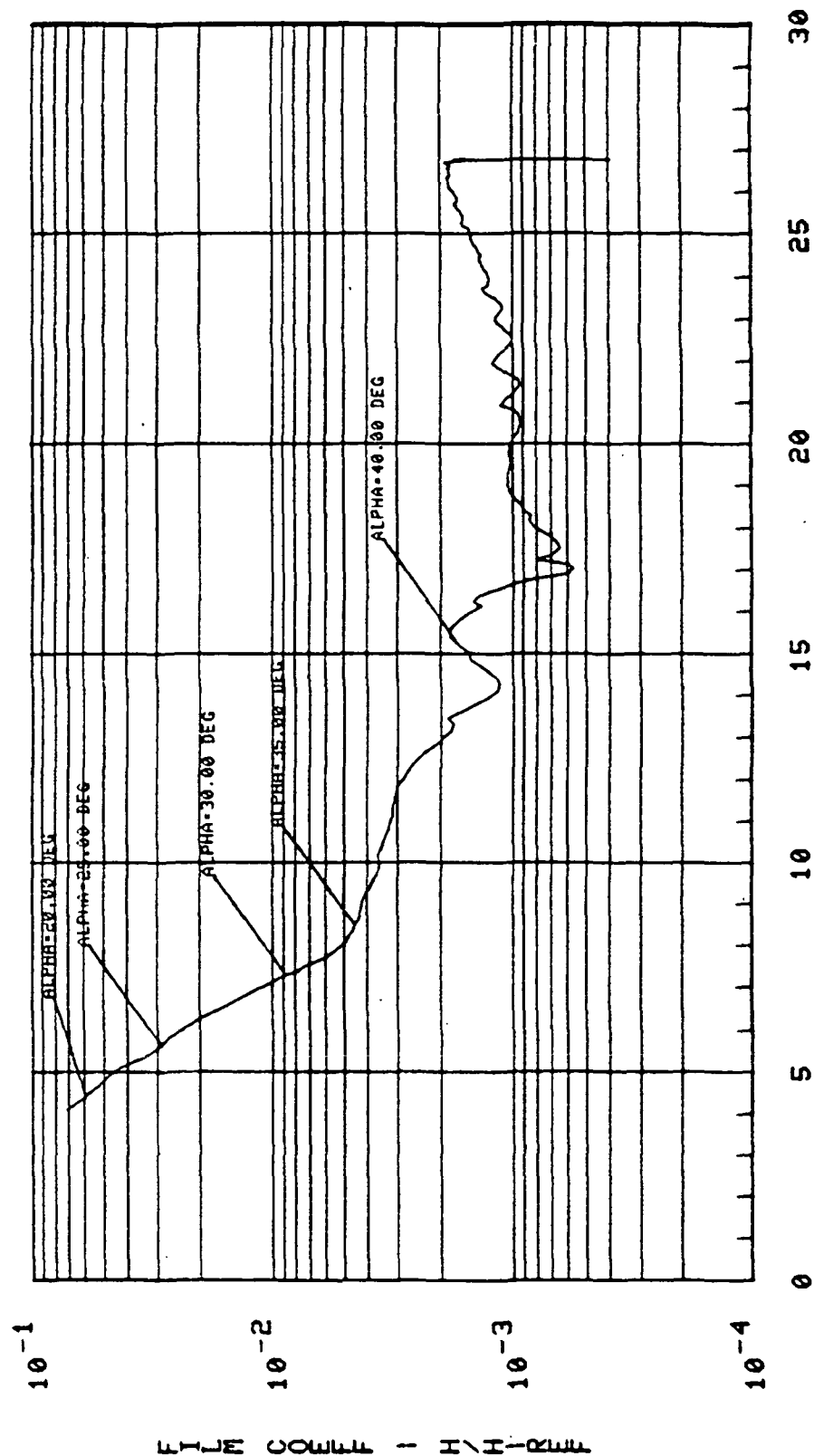
U07T98324/H-REF 965-1300 SEC



U07T98324/H-REF

# STS-5 (107 FT LENGTH CL X/L=0.500) FLIGHT PARAMETER COMPARIS

U07T98324/H-REF 150-1350 SEC



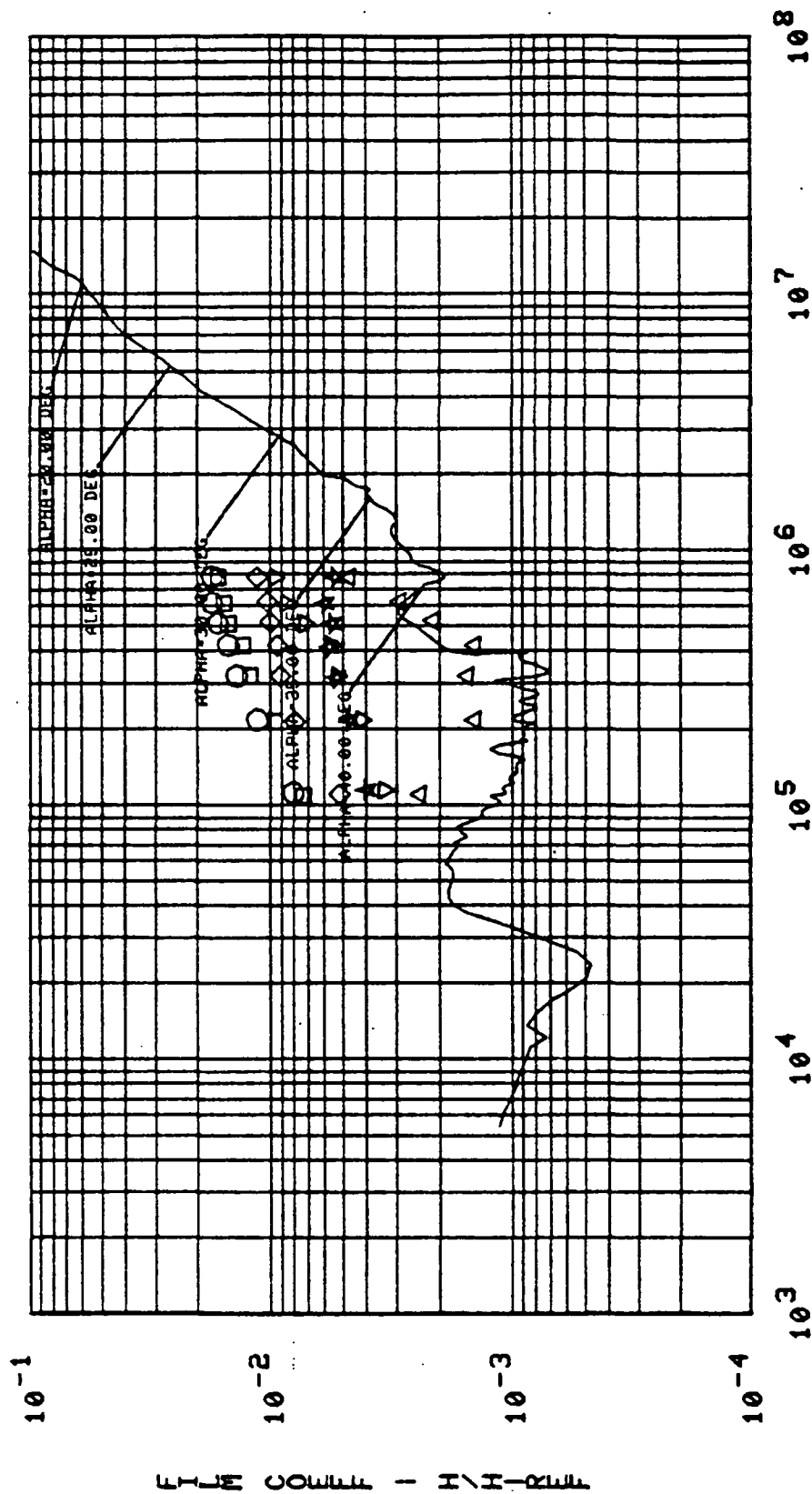
06/19/84  
BASE TIME - 27698591.000 SEC.



# STS-3 (107 FT LENGTH CL X/L=0.500) FLIGHT PARAMETER COMPARIS

○H39 ALPHA - 20 DEGREES  
 □H39 ALPHA - 25 DEGREES  
 ◇H39 ALPHA - 30 DEGREES  
 △H39 ALPHA - 35 DEGREES  
 ☆H39 ALPHA - 40 DEGREES  
 ★H39 ALPHA - 45 DEGREES

U073832A/H-REF 200-1380 SEC



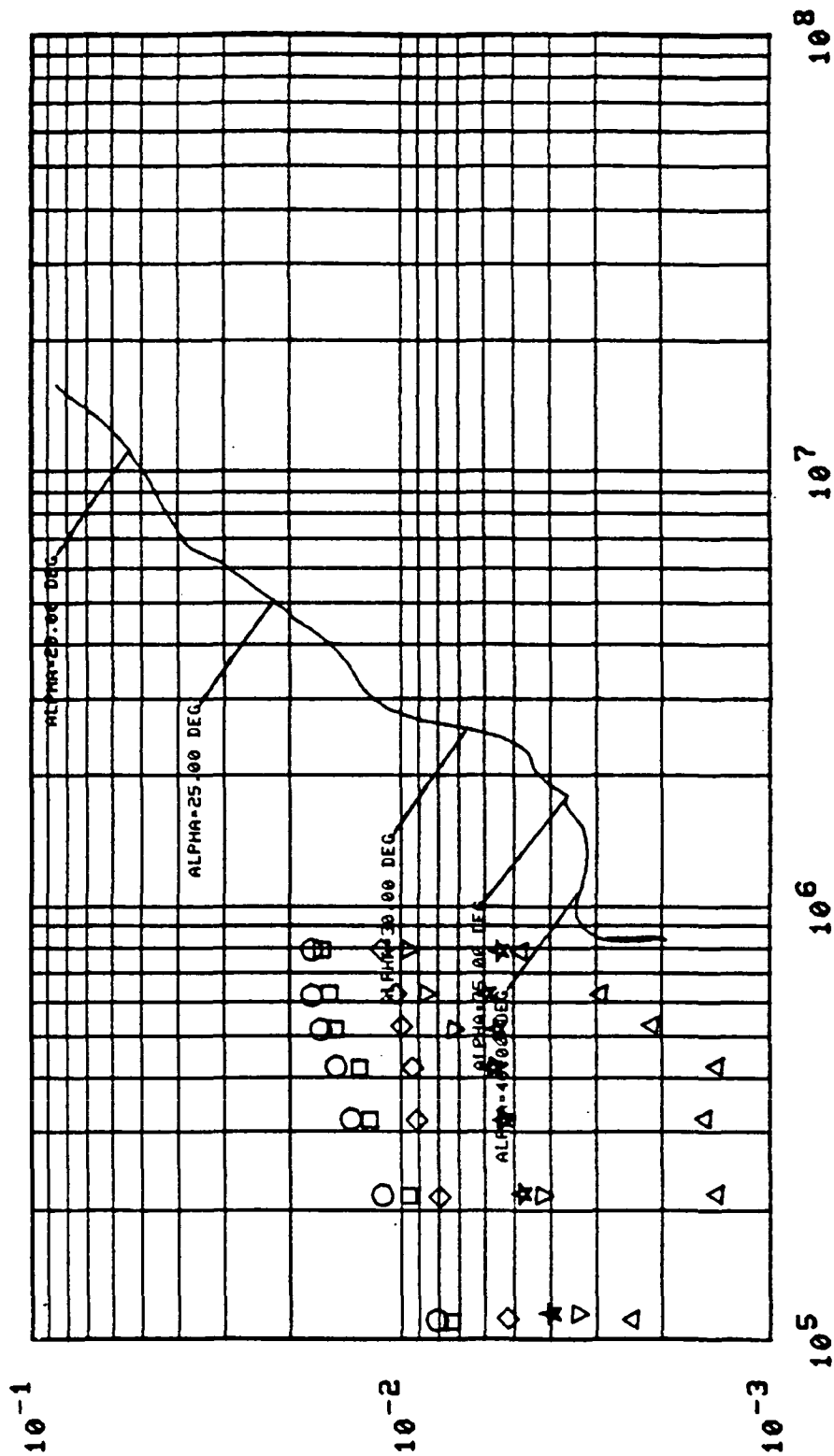
REYNOLDS NUMBER (NS) 06/18/84 BASE TIME - 07745684.000 SEC.

# STS-4 (107 FT LENGTH CL X/L=0.500) FLIGHT PARAMETER COMPARIS

U07T9832A/H-REF 965-1300 SEC

- OH39 ALPHA - 20 DEGREES
- OH39 ALPHA - 25 DEGREES
- OH39 ALPHA - 30 DEGREES
- OH39 ALPHA - 35 DEGREES
- OH39 ALPHA - 40 DEGREES
- OH39 ALPHA - 45 DEGREES

□ ○ × △



U07T9832A/H-REF

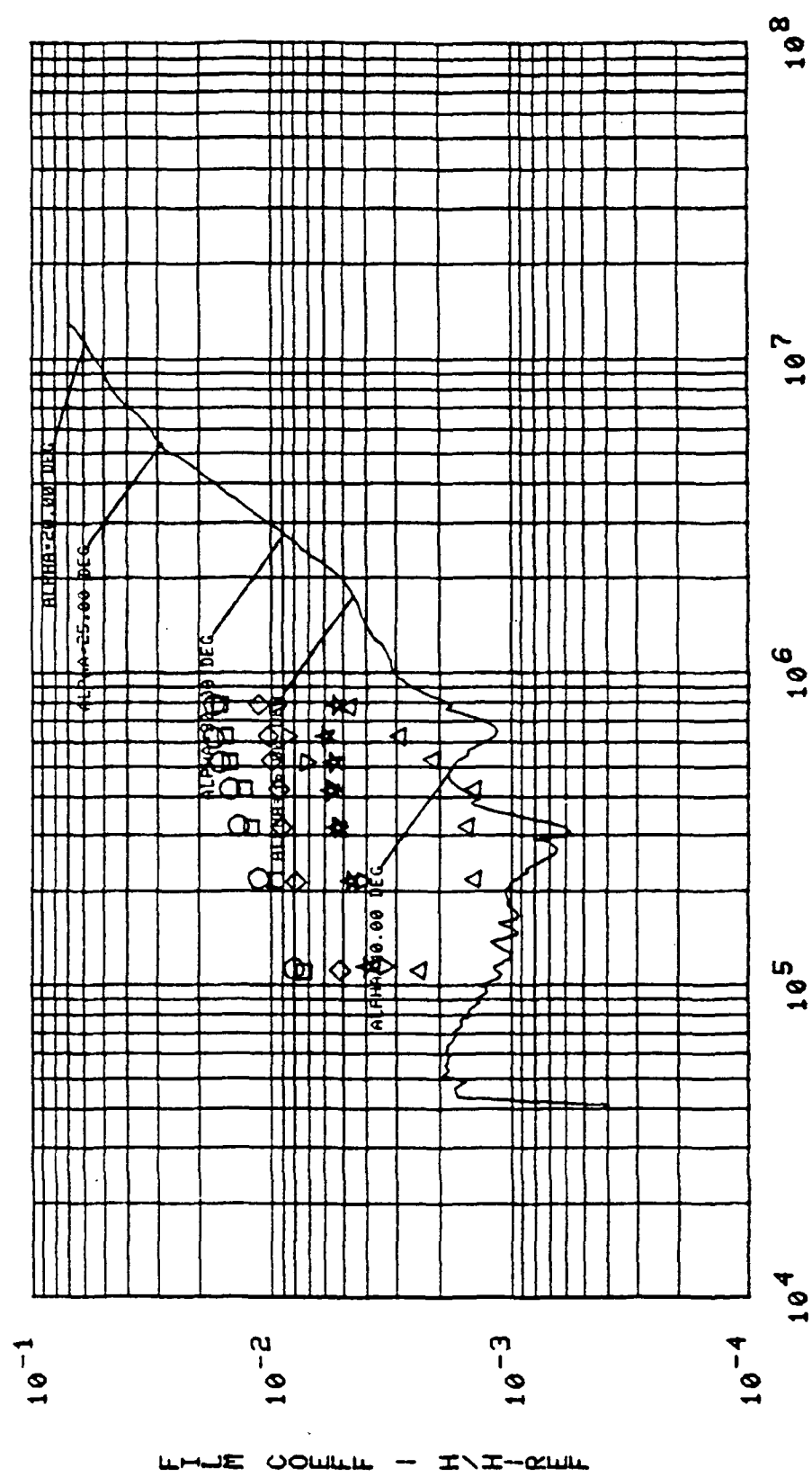
REYNOLDS NUMBER (NS) BASE TIME - 16040423.000 SEC. 06/18/84

# STS-5 (107 FT LENGTH CL X/L=0.500) FLIGHT PARAMETER COMPARIS

- Q439 ALPHA = 20 DEGREES
- Q439 ALPHA = 25 DEGREES
- Q439 ALPHA = 30 DEGREES
- Q439 ALPHA = 35 DEGREES
- Q439 ALPHA = 40 DEGREES
- Q439 ALPHA = 45 DEGREES

007T93324/M-PEF 150-1350 SEC

□ ◇ ×

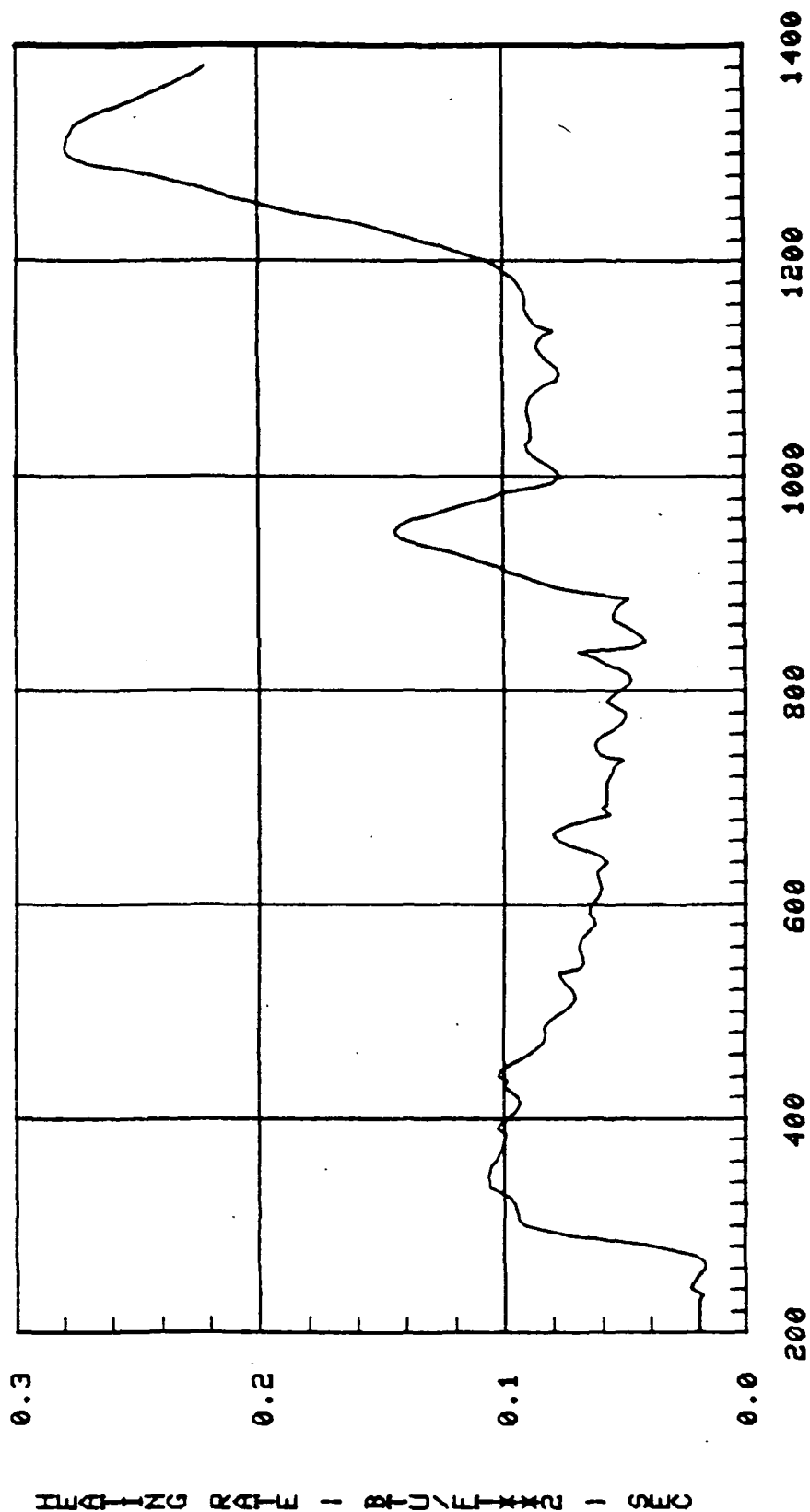


FILM COEFF - H/H-REF

REYNOLDS NUMBER (NS) 06/19/84 BASE TIME = 27698591.000 SEC.

# STS-3 (107 FT LENGTH CL X/L=0.500) FLIGHT PARAMETER COMPARIS

U07T98324

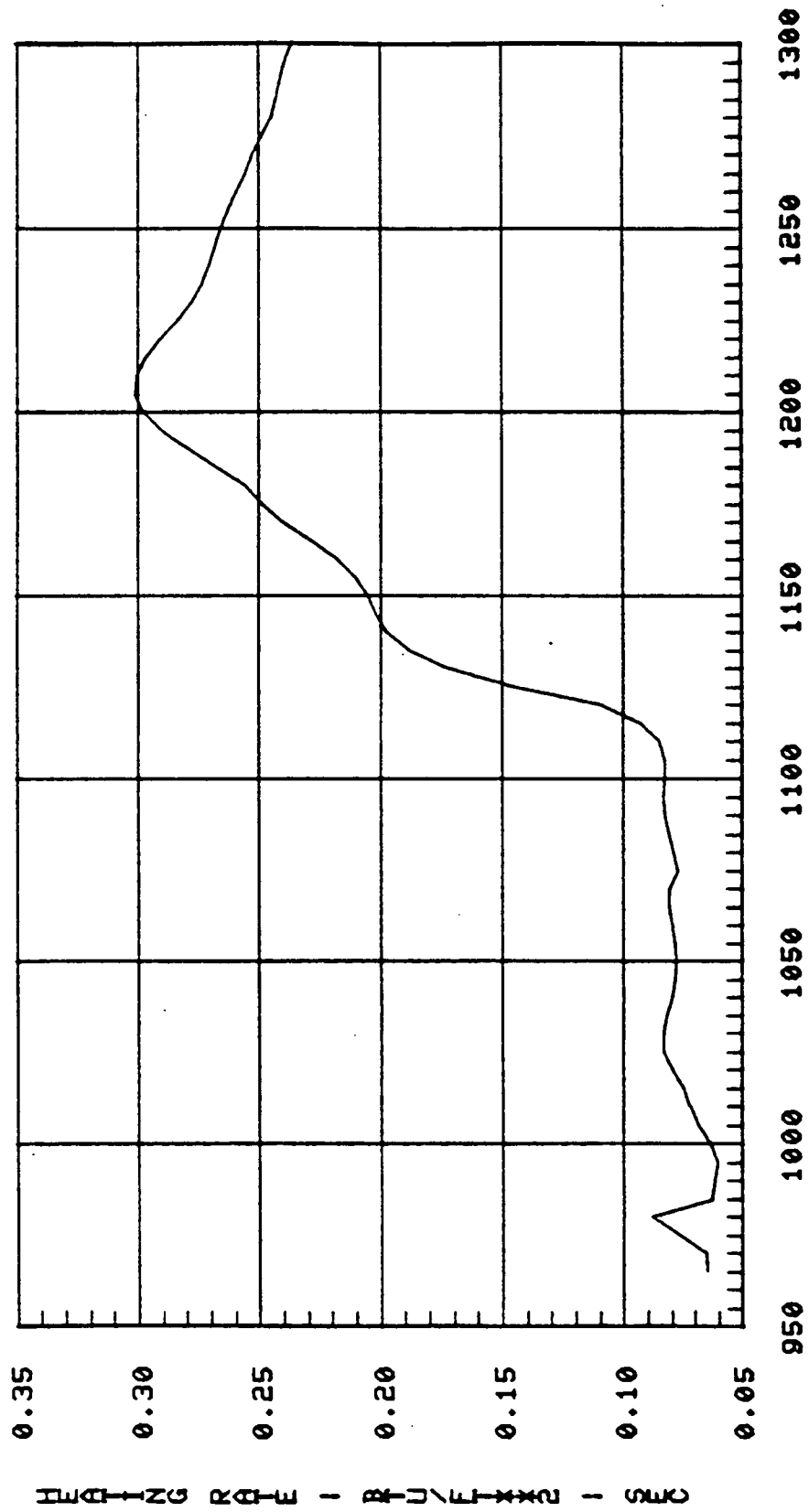


TIME - SECONDS

06/18/84

# STS-4 (107 FT LENGTH CL X/L=0.500) FLIGHT PARAMETER COMPARIS

U07T9832A

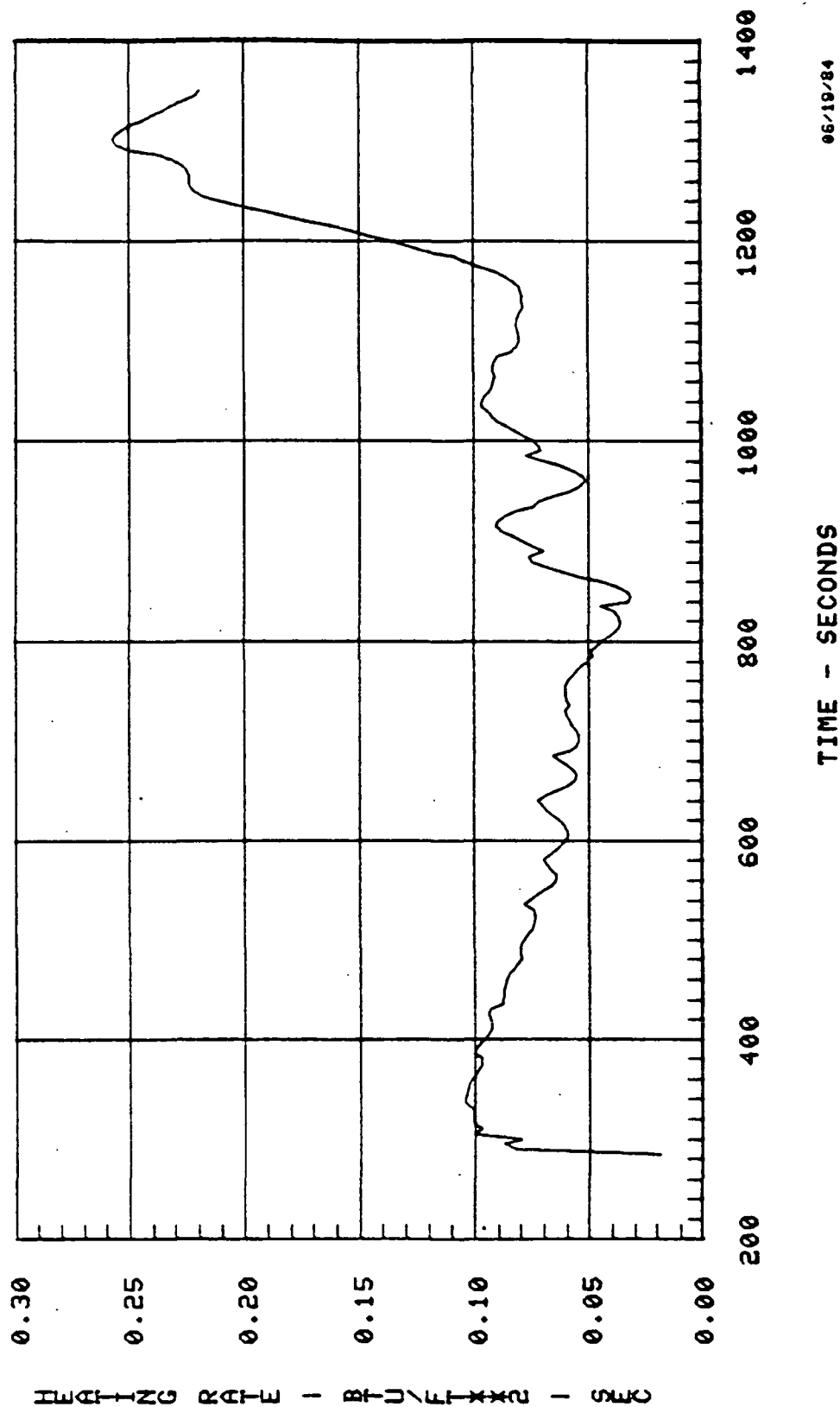


TIME - SECONDS

06/18/84

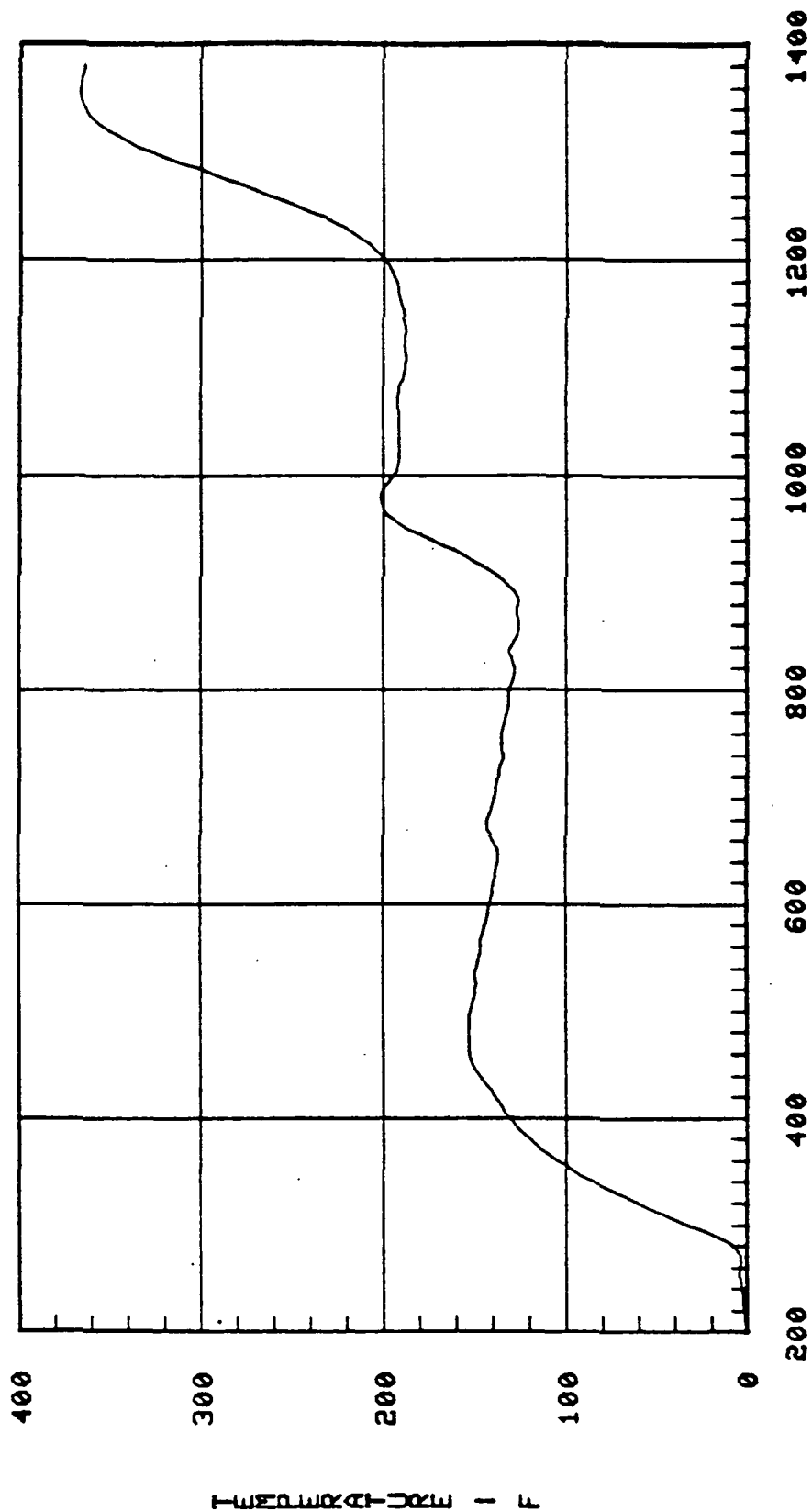
# STS-5 (107 FT LENGTH CL X/L=0.500) FLIGHT PARAMETER COMPARIS

U07T98324



# STS-3 (107 FT LENGTH CL X/L=0.500) FLIGHT PARAMETER COMPARIS

U07TS8324

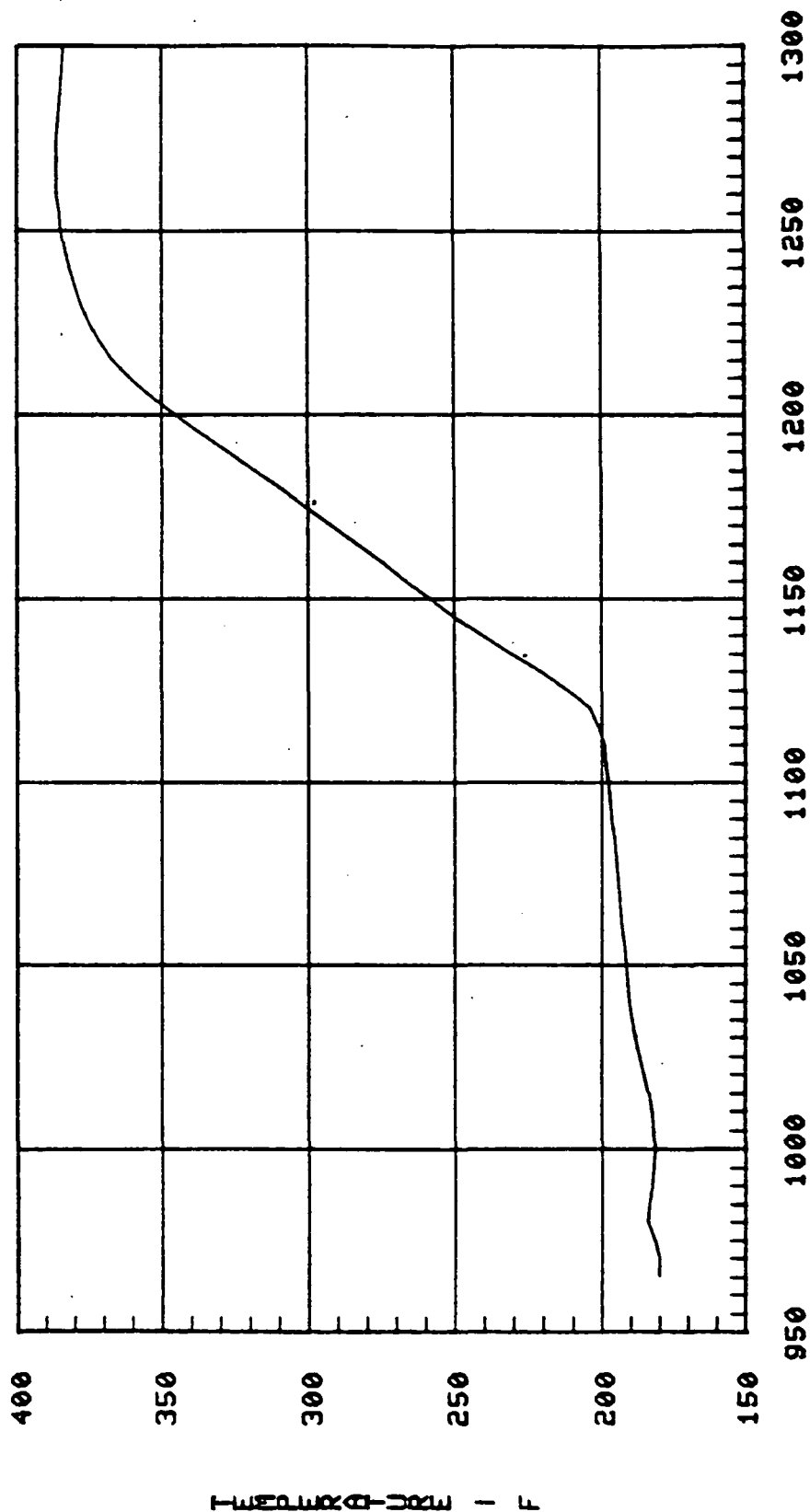


TIME - SECONDS

05/18/84

# STS-4 (107 FT LENGTH CL X/L=0.500) FLIGHT PARAMETER COMPARIS

U07T9832A



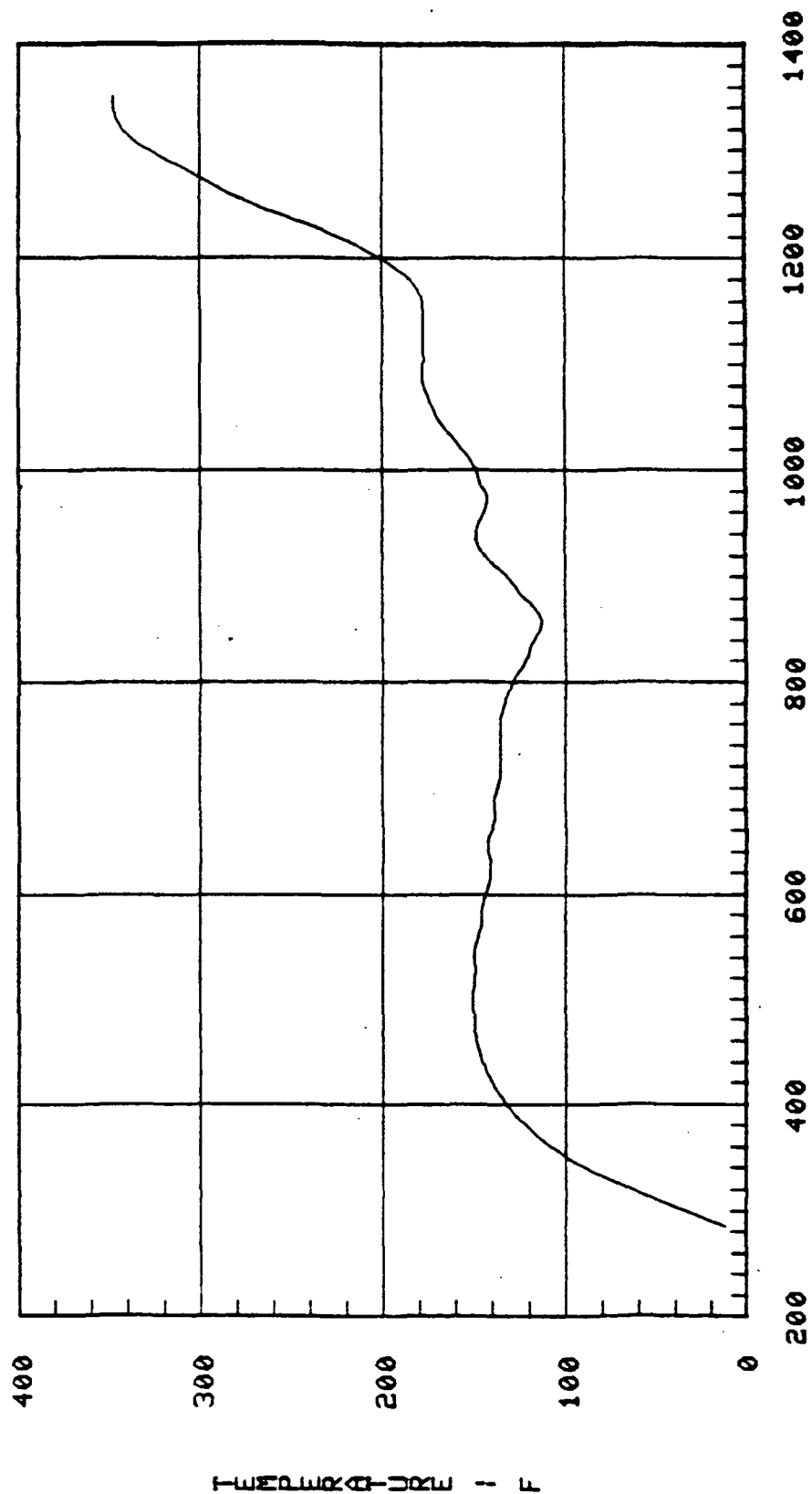
TIME - SECONDS

06/18/84



# STS-5 (107 FT LENGTH CL X/L=0.500) FLIGHT PARAMETER COMPARIS

007T9832A



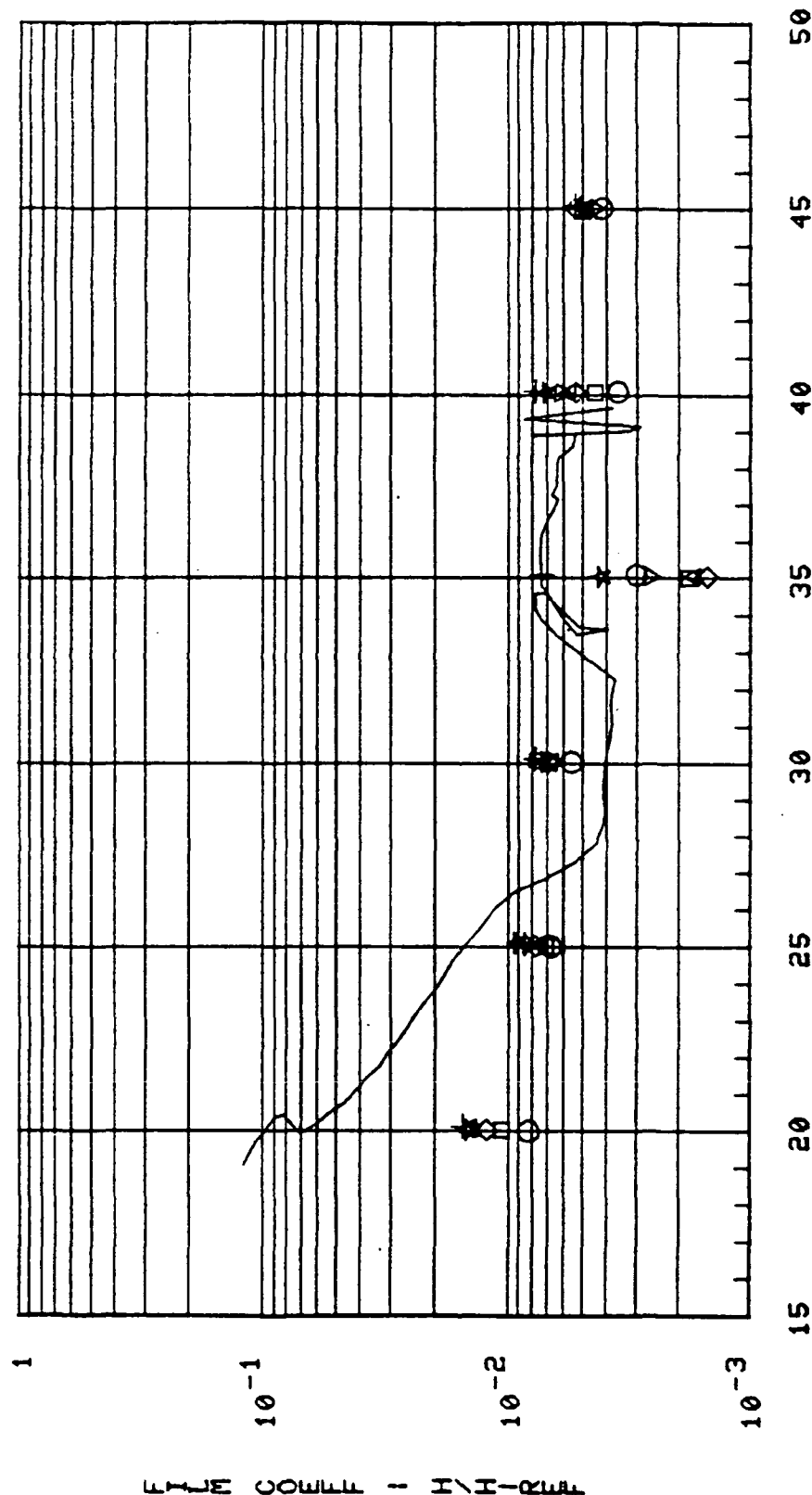
TIME - SECONDS

06/19/84

# STS-1 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

0H39 0.0175 SCALE RE - 0.5 E06  
 0H39 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H39 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

□ ○ × △ ★ +



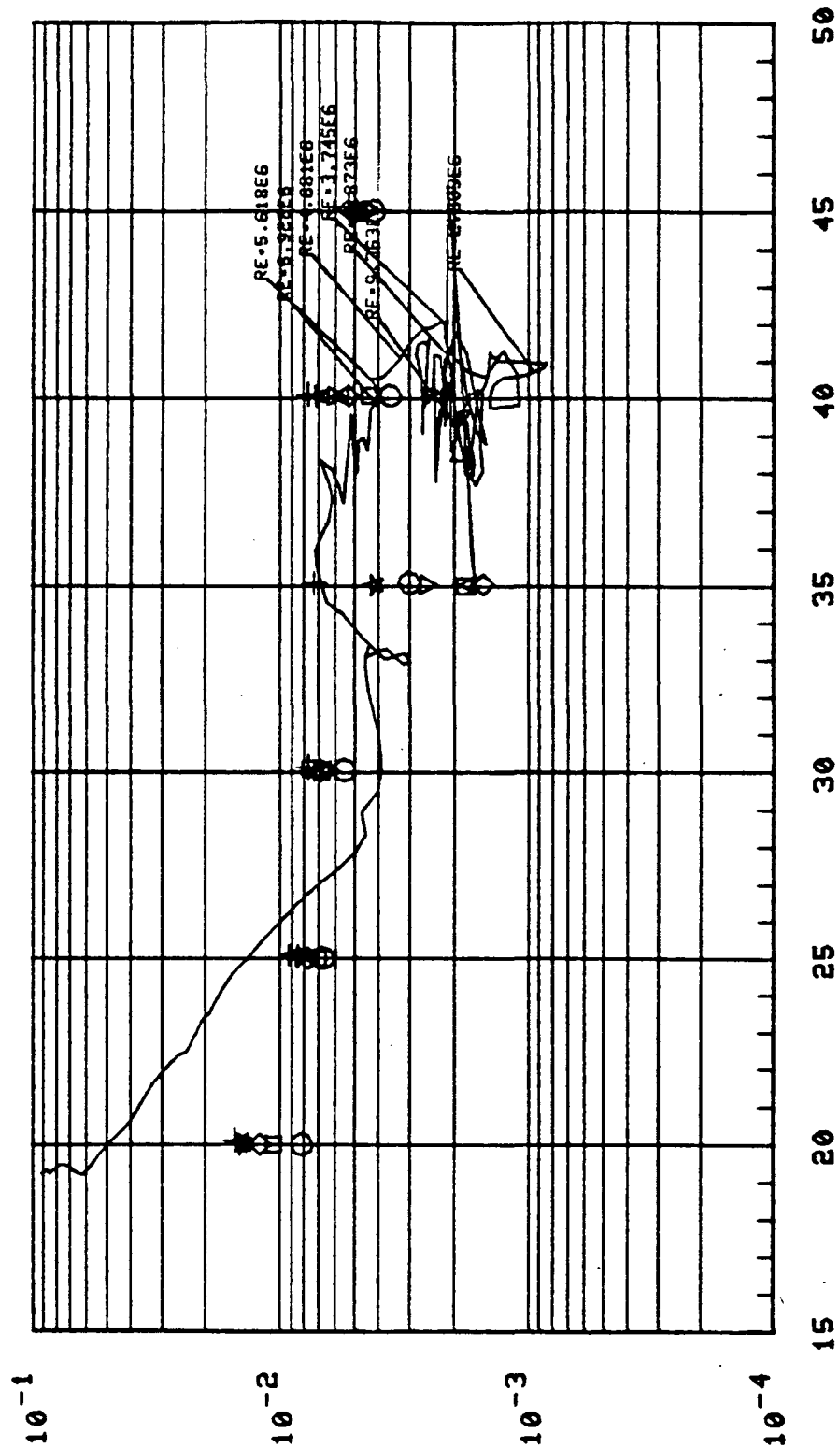
ANGLE-OF-ATTACK - DEG  
 BASE TIME - 09049744.000 SEC.  
 06/18/84

# STS-2 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

U09T95184/H-REF 200-1480 SEC

OH39 0.0175 SCALE RE - 0.5 E06  
 OH39 0.0175 SCALE RE - 1.0 E06  
 OH39 0.0175 SCALE RE - 1.5 E06  
 OH39 0.0175 SCALE RE - 2.0 E06  
 OH39 0.0175 SCALE RE - 2.5 E06  
 OH39 0.0175 SCALE RE - 3.0 E06  
 OH39 0.0175 SCALE RE - 3.7 E06

○ □ × △ ★  
 ○ □ × △ ★

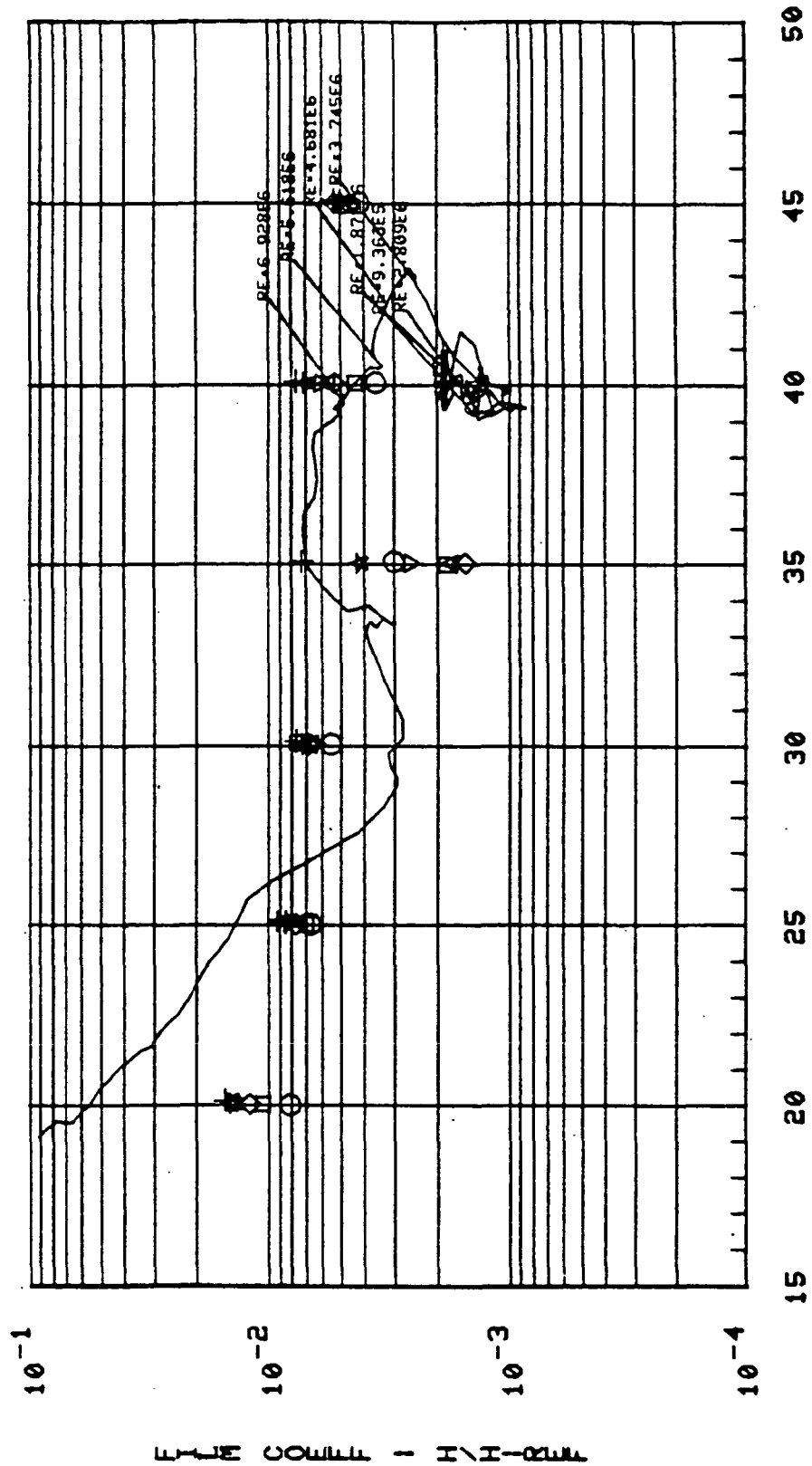


FLOW COEFF - H/H-REF

ANGLE-OF-ATTACK - DEG  
 06/18/84  
 BASE TIME - 27550236.000 SEC.

	0H39	0.0175	SCALE	PE	• 0.5	E06
	0H39	0.0175	SCALE	PE	• 1.0	E06
	0H39	0.0175	SCALE	PE	• 1.5	E06
	0H39	0.0175	SCALE	PE	• 2.0	E06
	0H39	0.0175	SCALE	PE	• 2.5	E06
	0H39	0.0175	SCALE	PE	• 3.0	E06
	0H39	0.0175	SCALE	PE	• 3.5	E06

009T95184/H-REF 200-1380 SEC



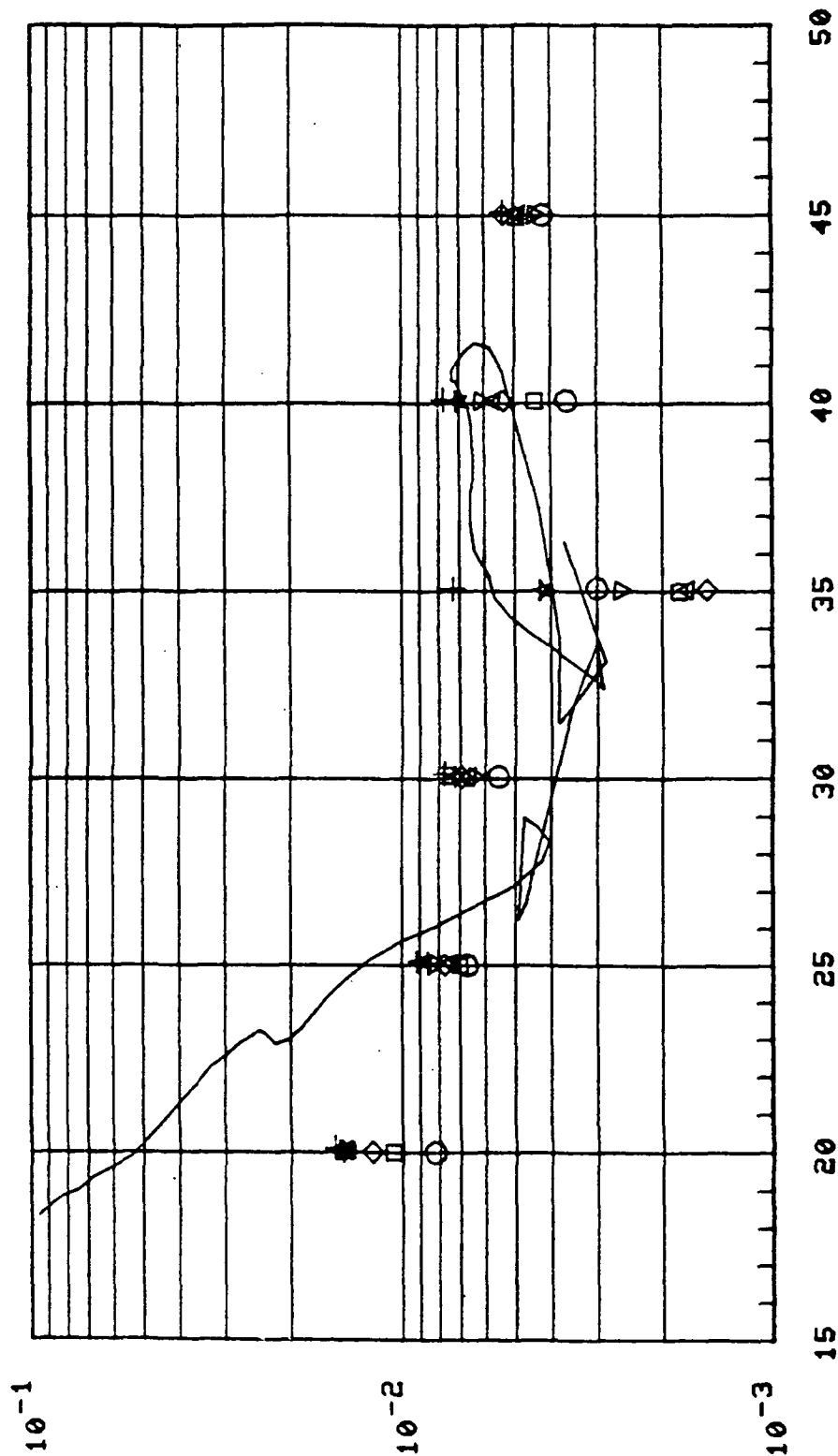
ANGLE-OF-ATTACK - DEG

# STS-4 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

U09T95184/H-REF 965-1300 SEC

0H39 0.0175 SCALE RE - 0.5 E06  
 0H39 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H39 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

○ □ × △ +



FILM COEFF - H/H-REF

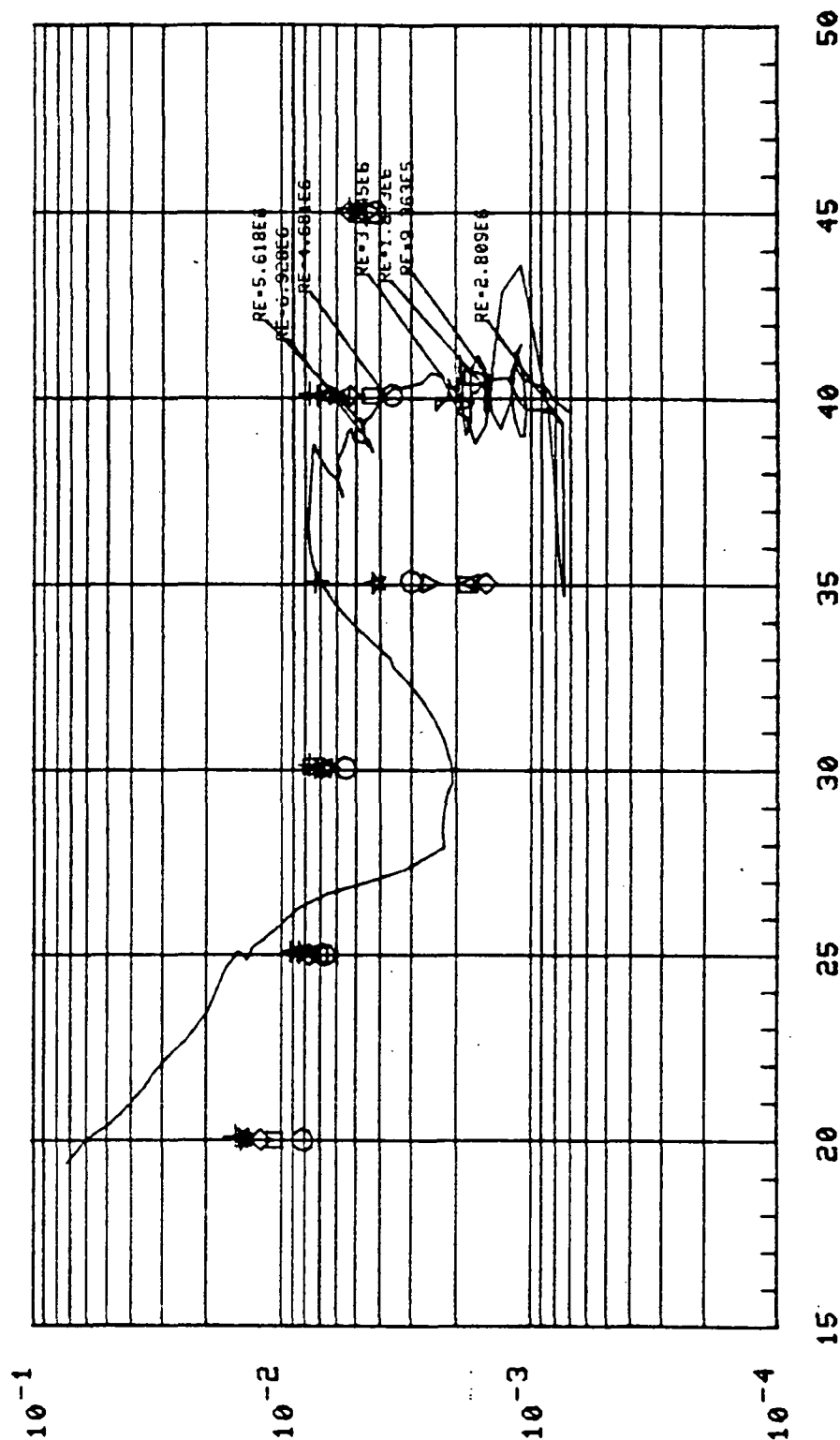
06/18/84  
 BASE TIME - 16040423.000 SEC.

# ST9-5 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

009T9512H/H-REF 150-1350 SEC

0H39 0.0175 SCALE RE - 0.5 E06  
 0H39 0.0175 SCALE RE - 1.0 E06  
 0H39 0.0175 SCALE RE - 1.5 E06  
 0H39 0.0175 SCALE RE - 2.0 E06  
 0H39 0.0175 SCALE RE - 2.5 E06  
 0H39 0.0175 SCALE RE - 3.0 E06  
 0H39 0.0175 SCALE RE - 3.7 E06

○ □ × △ ★ +



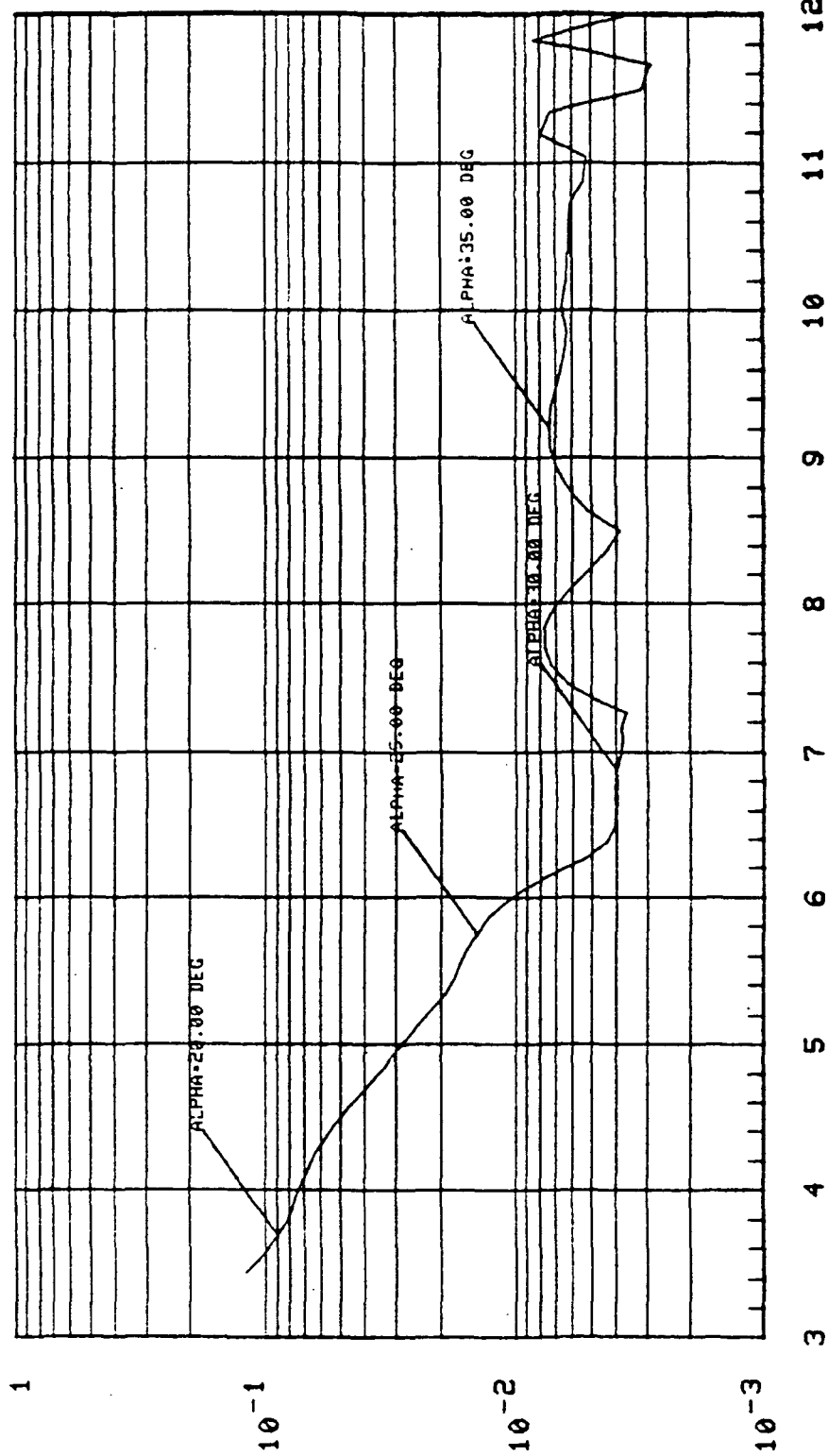
FILM COEFF - H/H-REF

06/19/84  
 BASE TIME - 27698591.000 SEC.

ANGLE-OF-ATTACK - DEG

# STS-1 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

107T35164 H-REF 1065-1400 SEC



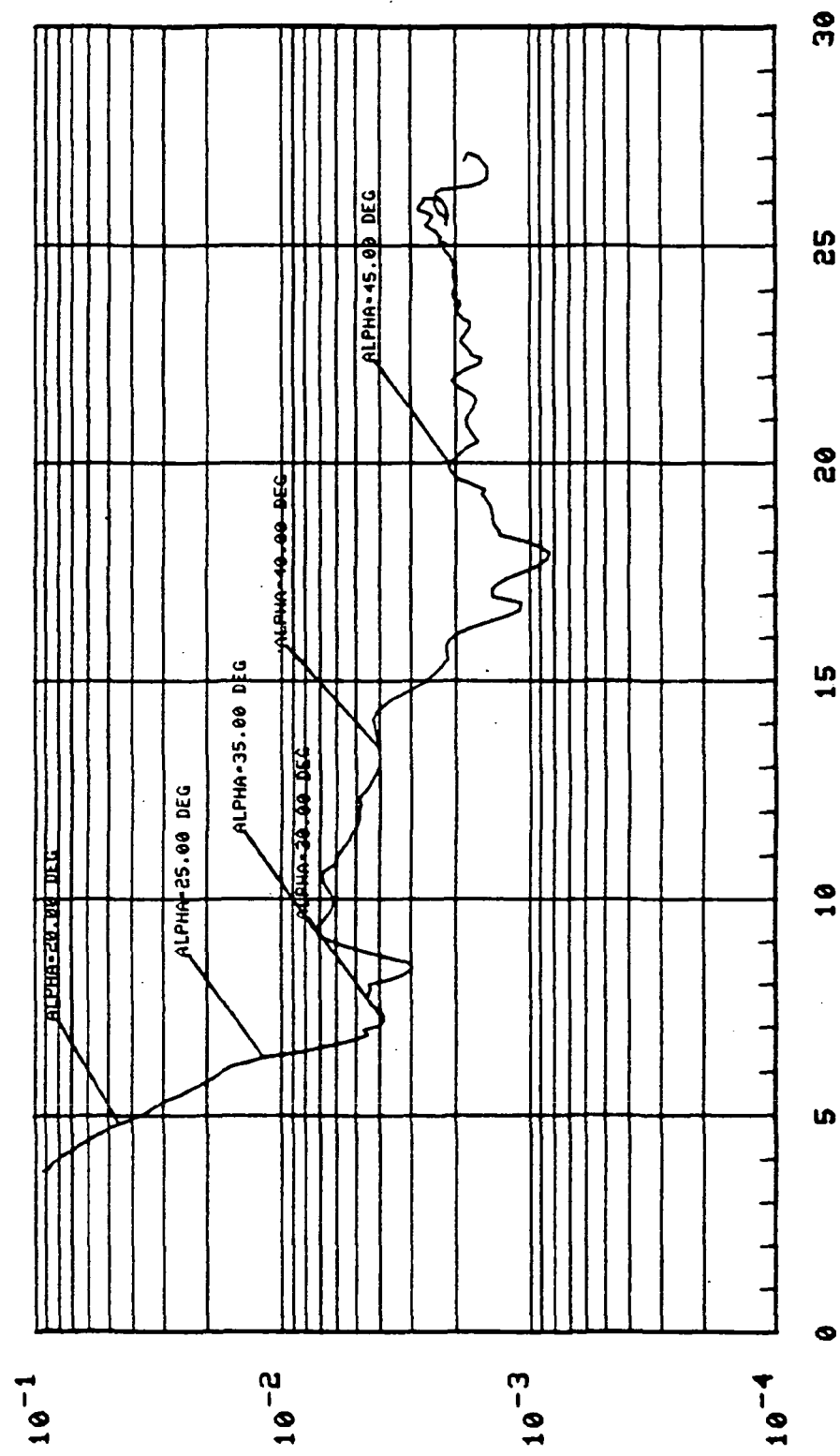
05/18/84  
BASE TIME - 09049744.000 SEC.

MACH NUMBER

CL - H-REF

# STS-2 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

U03T9518A/H-REF 200-1480 SEC



FLIGHT COMPARE - H/H-REF

MACH NUMBER

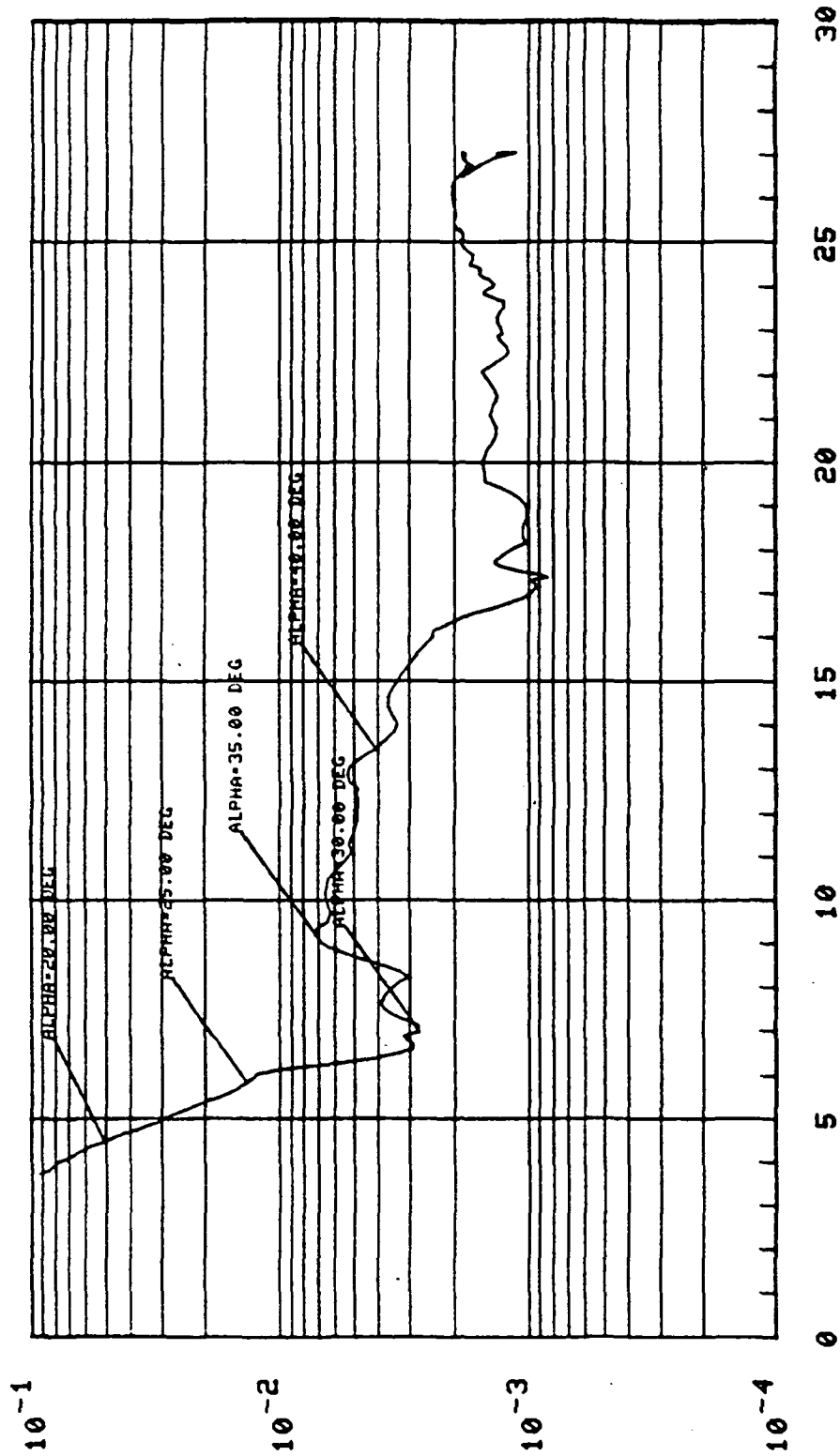
06/18/84

BASE TIME - 27550236.000 SEC.



# STS-3 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

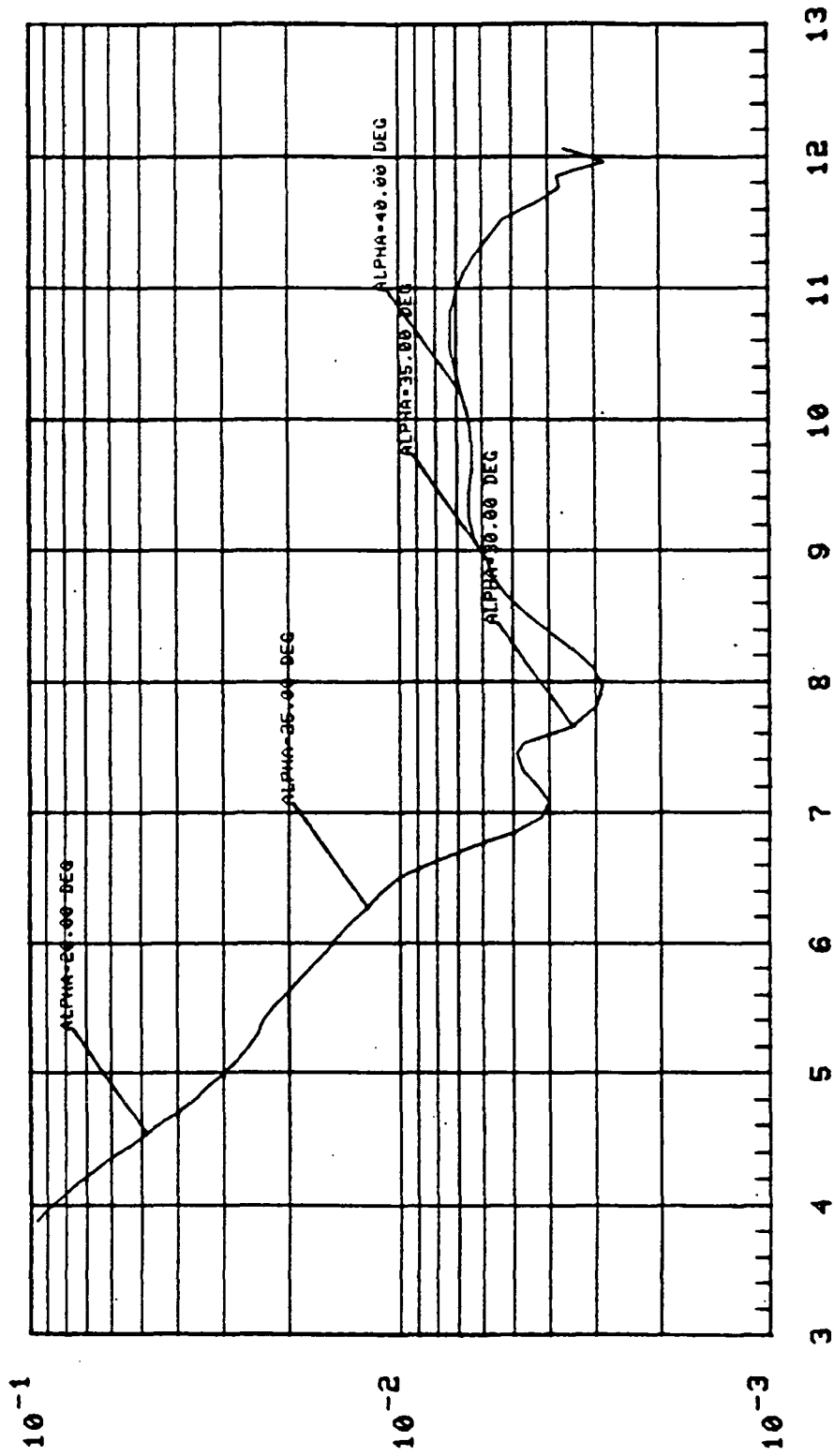
W09T95184/H-PEF 200-1380 SEC



06/18/84  
BASE TIME - 07745684.000 SEC.

# STS-4 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

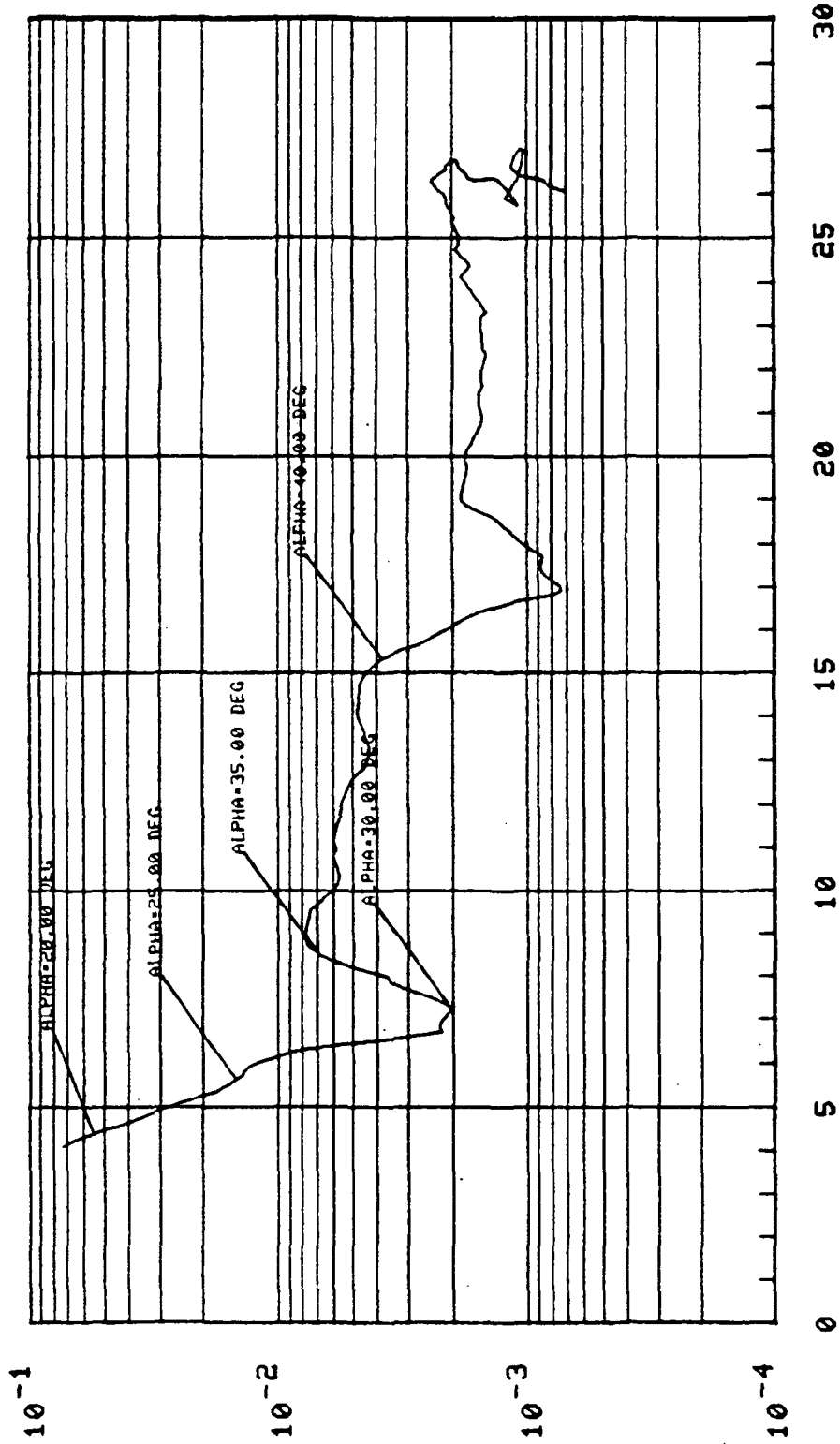
U09T9518A/H-REF 965-1300 SEC



FLIGHT COMPARE - H/H-REF

# STS-5 (107 FT LENGTH CL $X/L=0.595$ ) FLIGHT PARAMETER COMPARIS

U09T95184/H-REF 150-1350 SEC



MACH NUMBER  
06/19/84  
BASE TIME • 27698591.000 SEC.

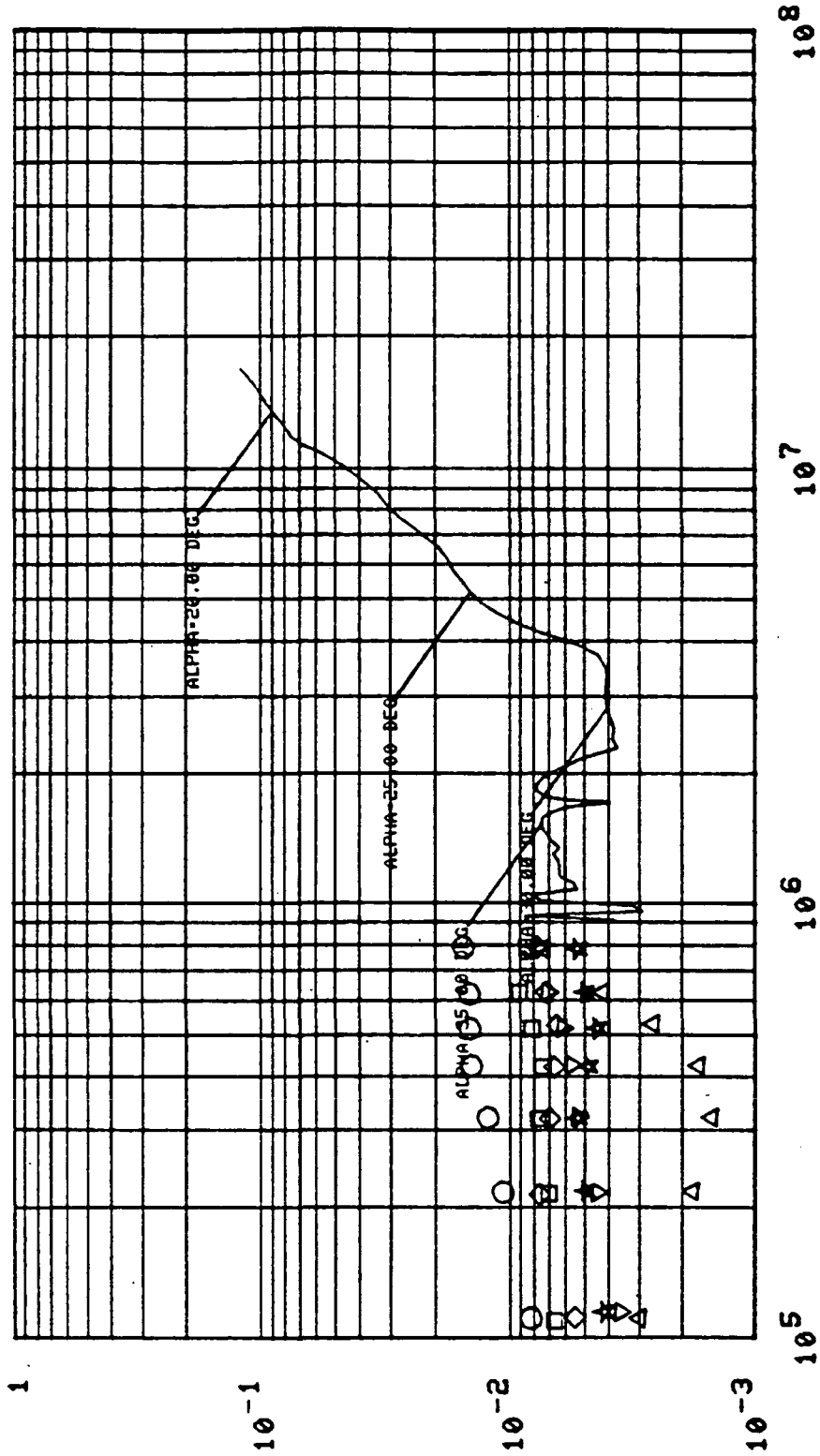
FILM COEFF - H/H-REF

# STS-1 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

OH39 ALPHA - 20 DEGREES  
 OH39 ALPHA - 25 DEGREES  
 OH39 ALPHA - 30 DEGREES  
 OH39 ALPHA - 35 DEGREES  
 OH39 ALPHA - 40 DEGREES  
 OH39 ALPHA - 45 DEGREES

U09T9518A/H-REF 1065-1460 SEC

○ □ × △ ★



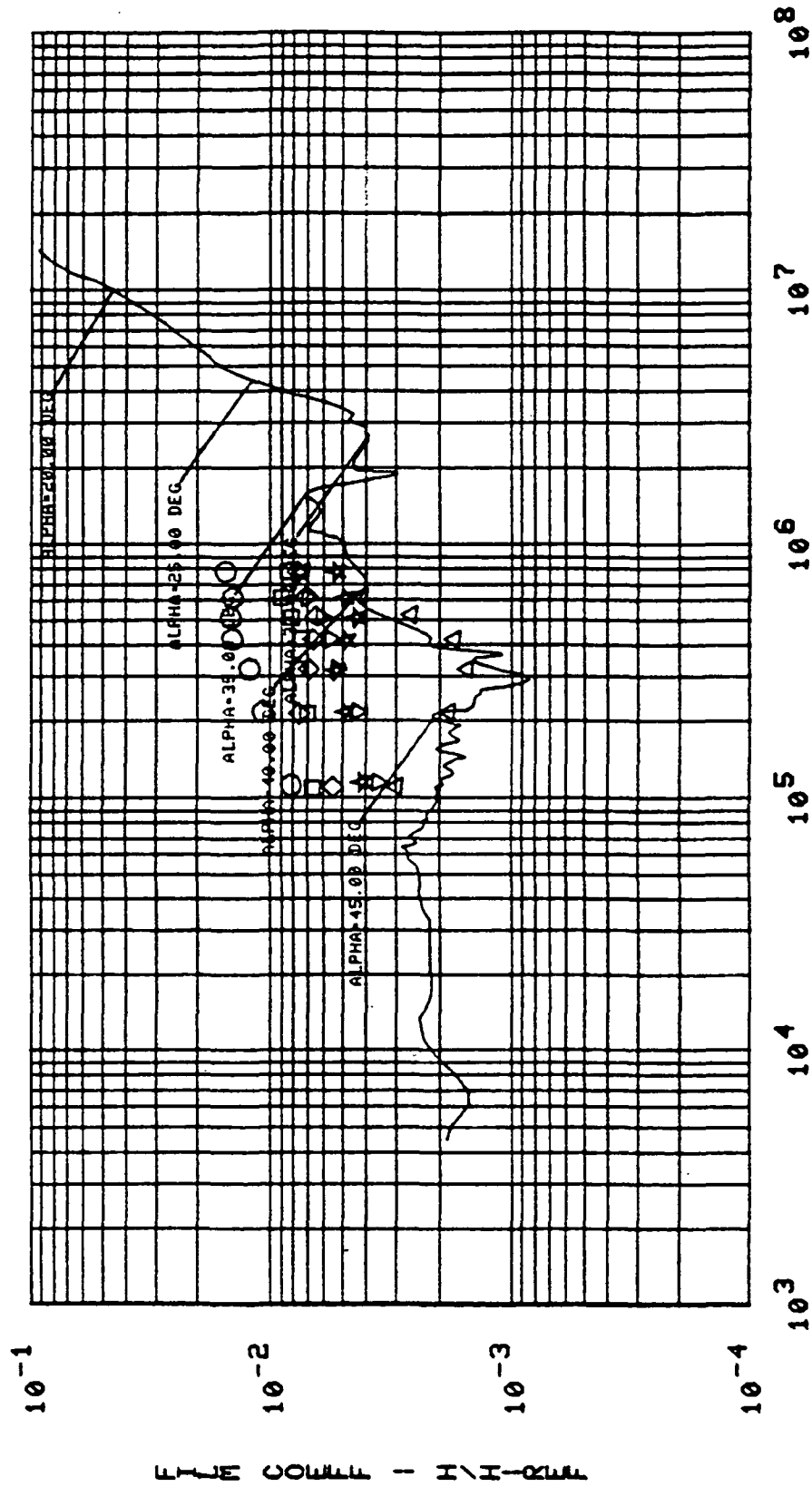
CL X/L=0.595

# STS-2 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

0439 ALPHA = 20 DEGREES  
 0439 ALPHA = 25 DEGREES  
 0439 ALPHA = 30 DEGREES  
 0439 ALPHA = 35 DEGREES  
 0439 ALPHA = 40 DEGREES  
 0439 ALPHA = 45 DEGREES

009795184/H-REF 200-1480 SEC

□ ○ × △



REYNOLDS NUMBER (NS)

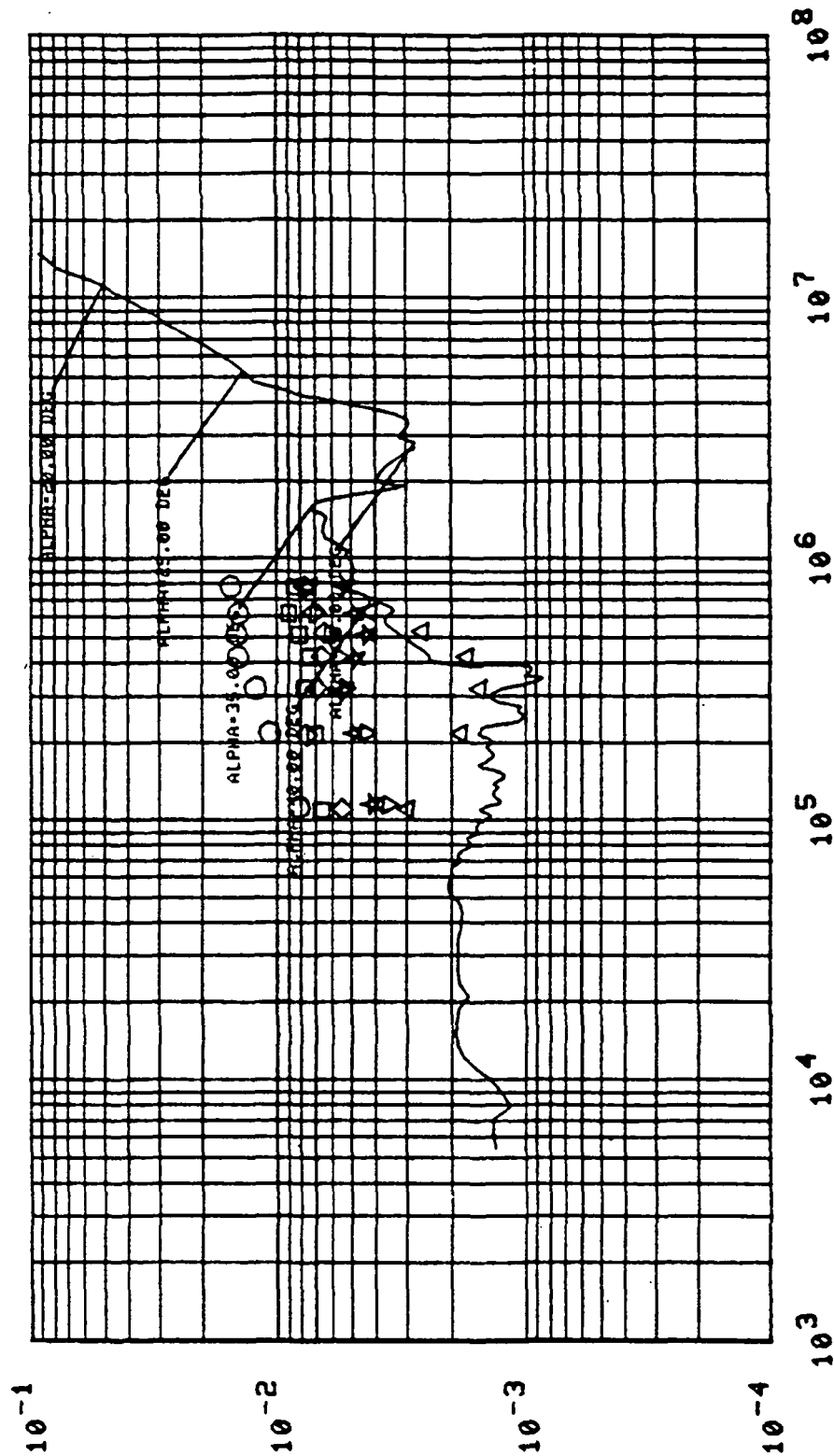
BASE TIME - 27550236.000 SEC.

06/18/84

# STS-3 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

O H39 ALPHA - 20 DEGREES  
 □ H39 ALPHA - 25 DEGREES  
 X H39 ALPHA - 30 DEGREES  
 Δ H39 ALPHA - 35 DEGREES  
 ☆ H39 ALPHA - 40 DEGREES  
 ☆ H39 ALPHA - 45 DEGREES

U09T95184/H-REF 200-1380 SEC



06/18/84  
BASE TIME - 0774584.000 SEC.

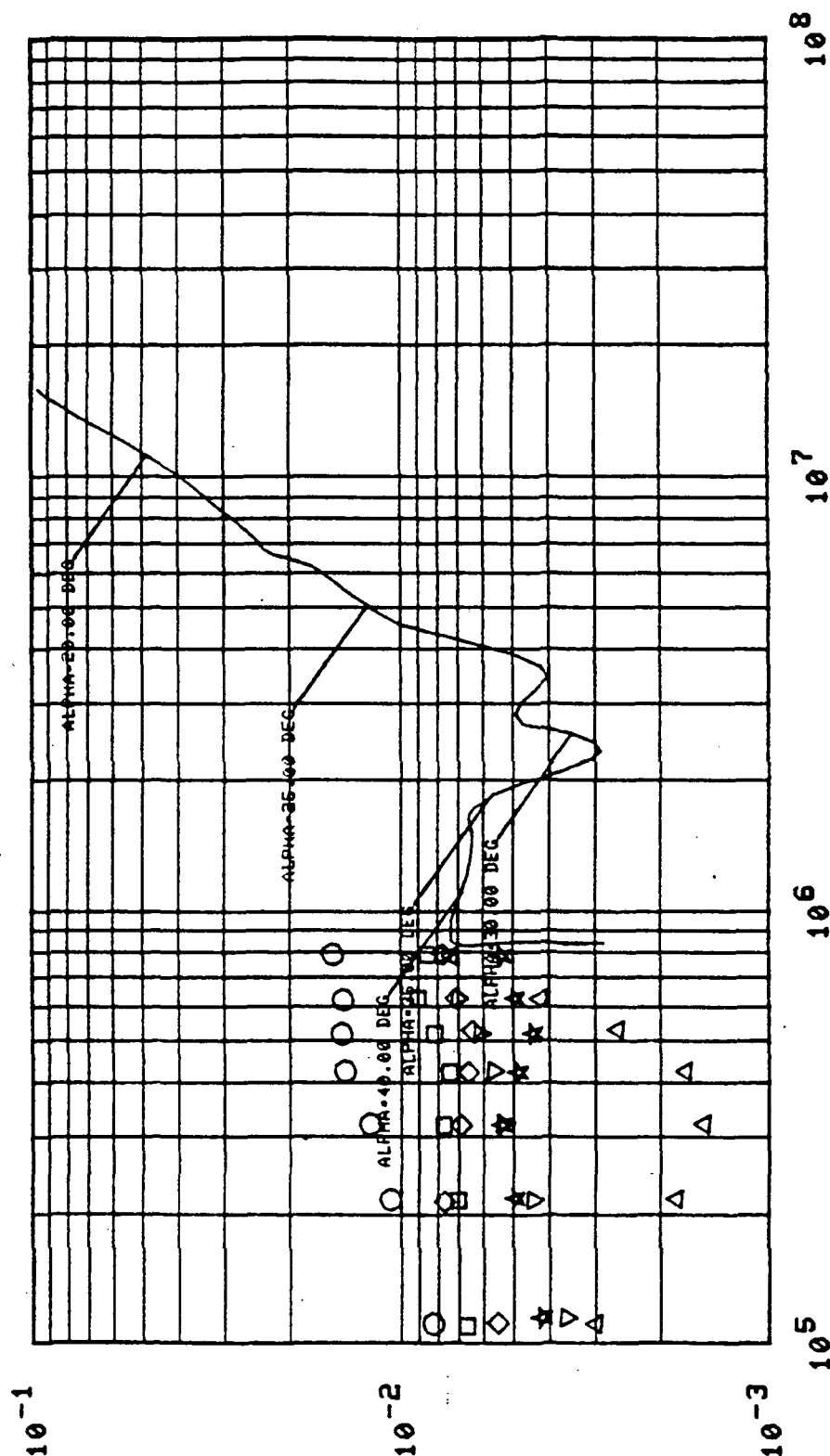
REYNOLDS NUMBER (NS)

# STS-4 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

U09T9518A/H-REF 965-1300 SEC

- 0H39 ALPHA - 20 DEGREES
- 0H39 ALPHA - 25 DEGREES
- 0H39 ALPHA - 30 DEGREES
- 0H39 ALPHA - 35 DEGREES
- 0H39 ALPHA - 40 DEGREES
- 0H39 ALPHA - 45 DEGREES

○ □ × \*



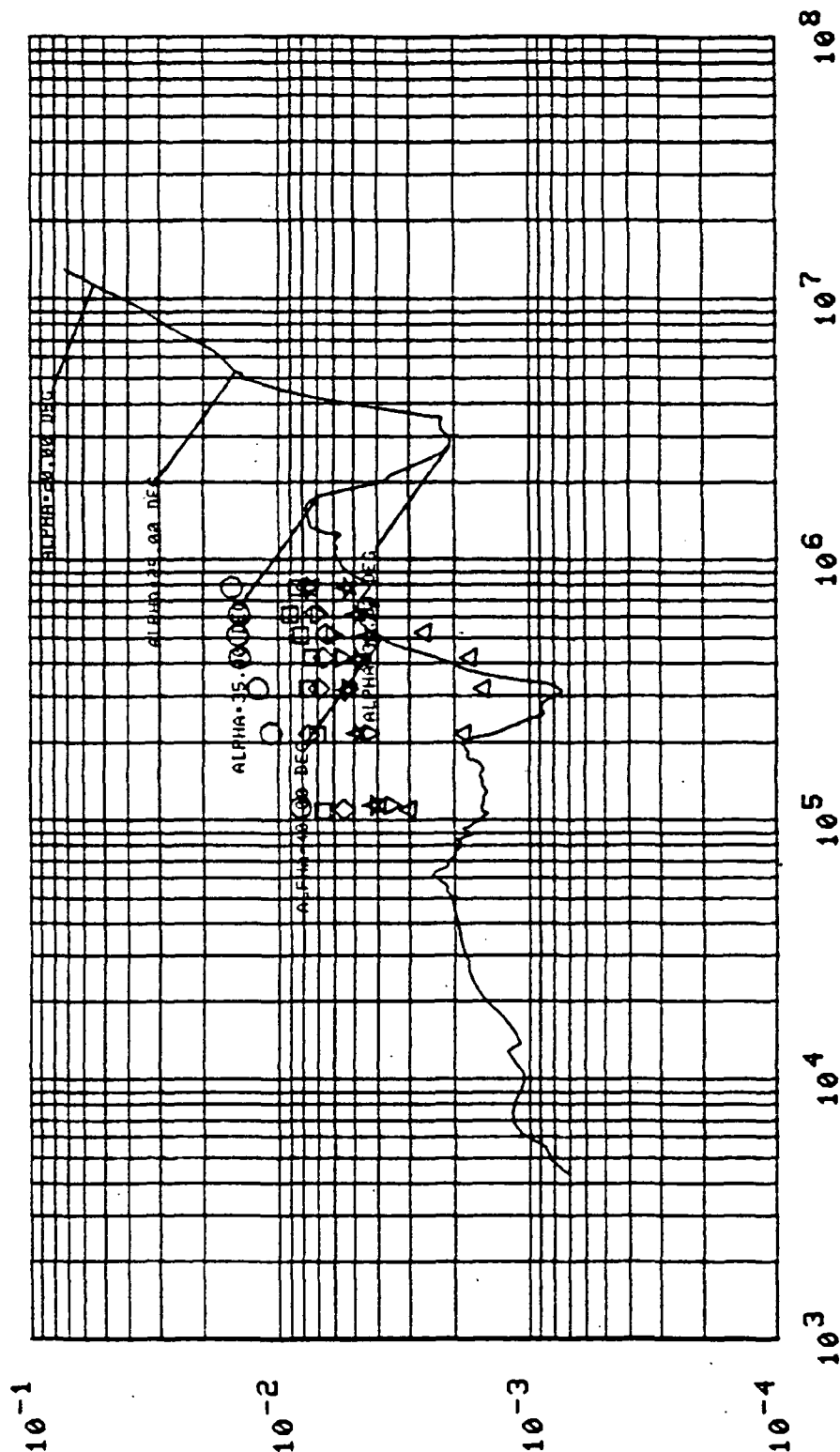
LIFT COEFF - H-H-REF

# STS-5 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

- QH39 ALPHA - 20 DEGREES
- QH39 ALPHA - 25 DEGREES
- QH39 ALPHA - 30 DEGREES
- QH39 ALPHA - 35 DEGREES
- QH39 ALPHA - 40 DEGREES
- QH39 ALPHA - 45 DEGREES

U09T9512A/H-REF 150-1350 SEC

○ □ × △



REYNOLDS NUMBER (NS)

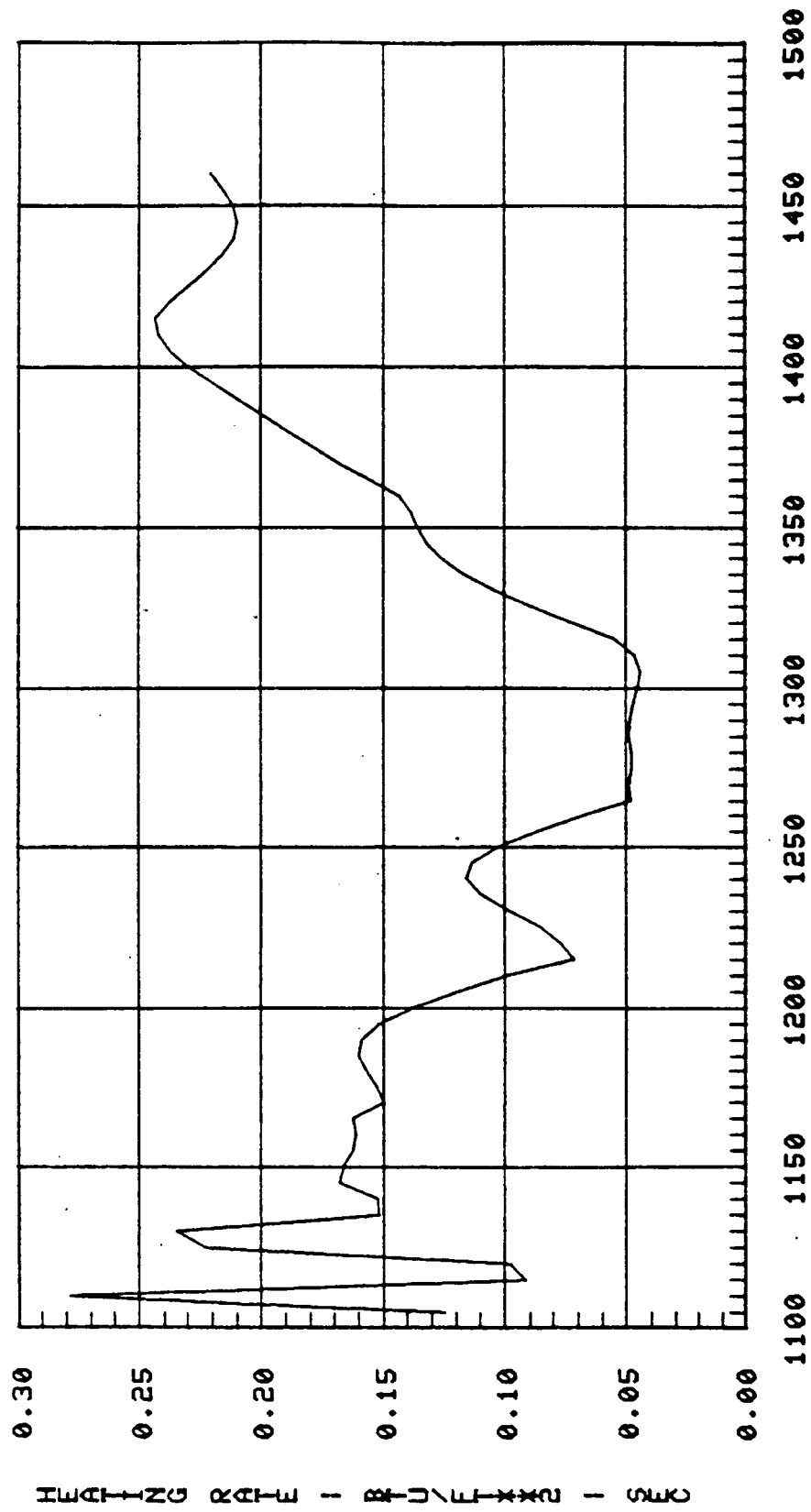
06/19/84

BASE TIME - 27698591.000 SEC.



# STS-1 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

U09T9512A

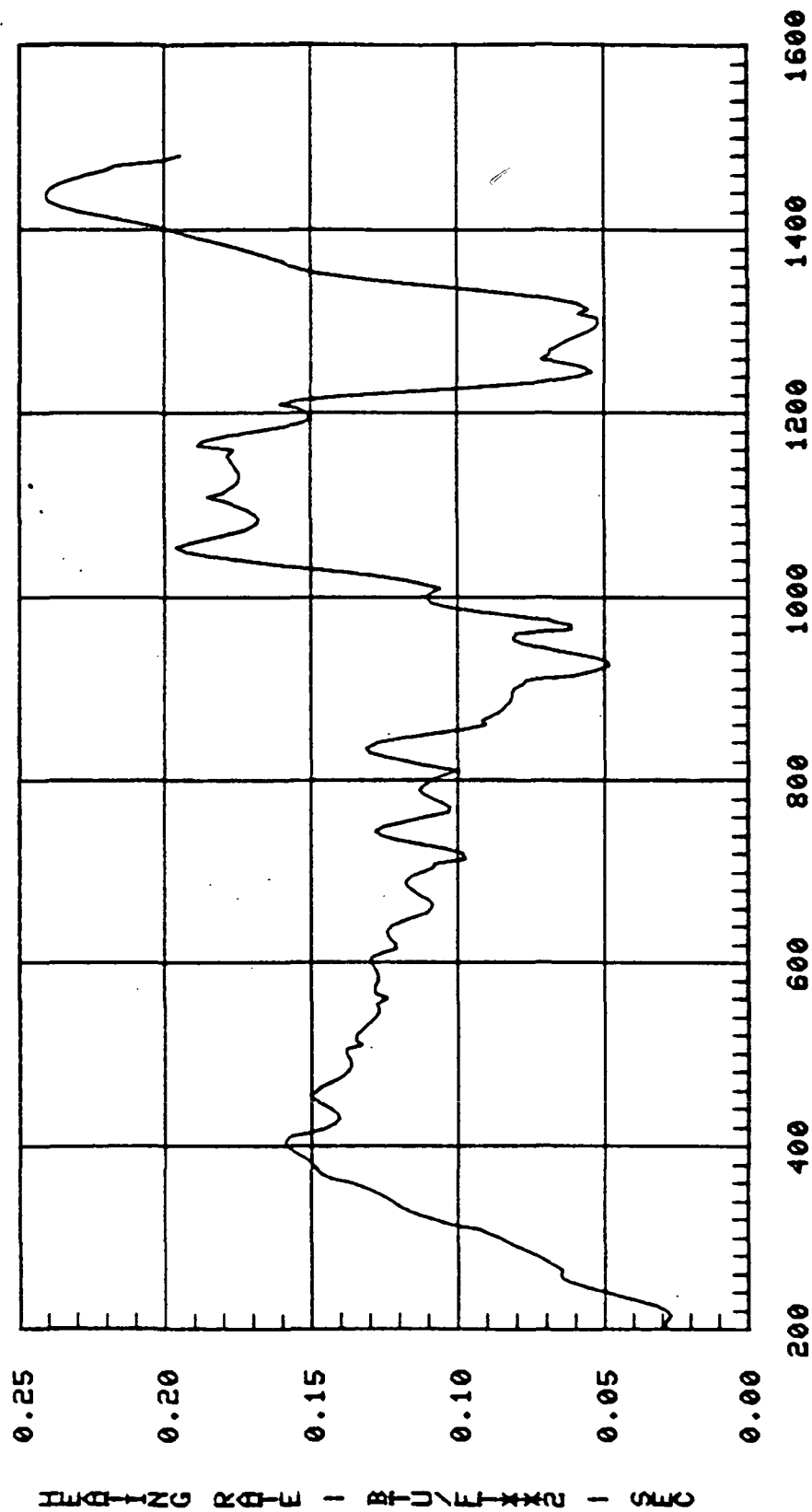


TIME - SECONDS

06/18/84

# STS-2 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

U09T9512A

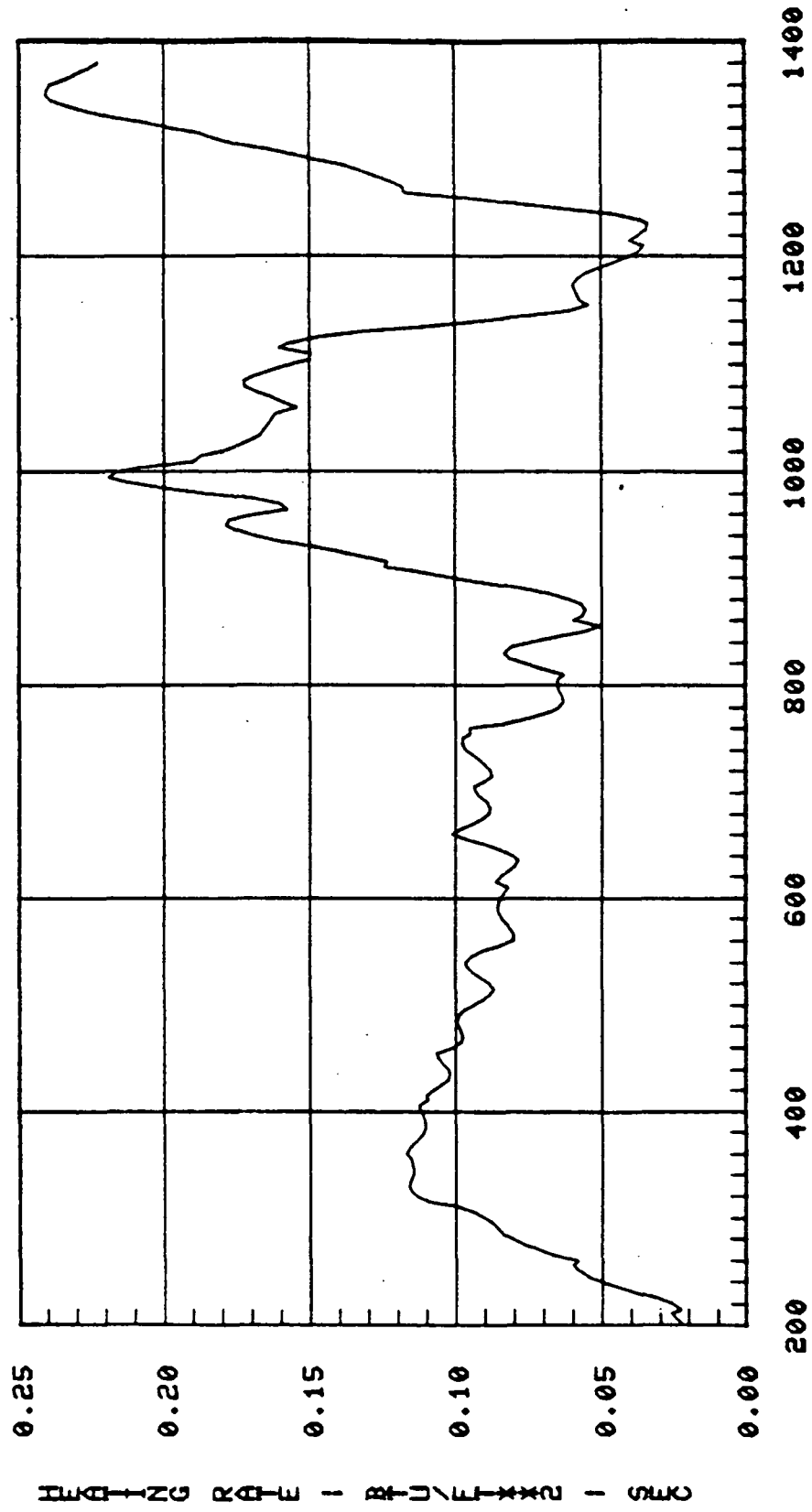


TIME - SECONDS

06/18/84

# STS-3 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

U09TS518A

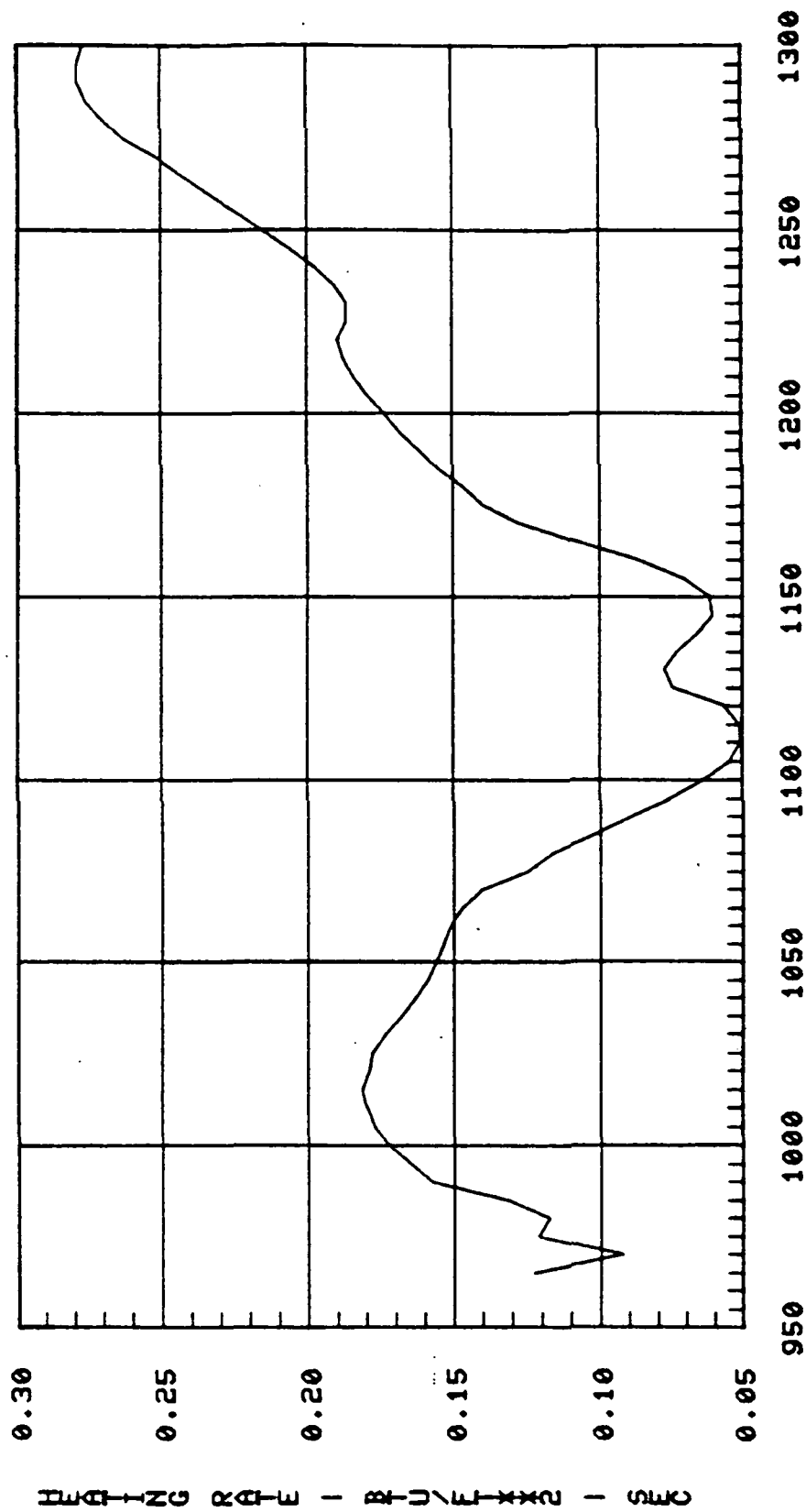


TIME - SECONDS

06/18/84

# STS-4 (107 FT LENGTH CL $X/L=0.595$ ) FLIGHT PARAMETER COMPARIS

U09T9518A

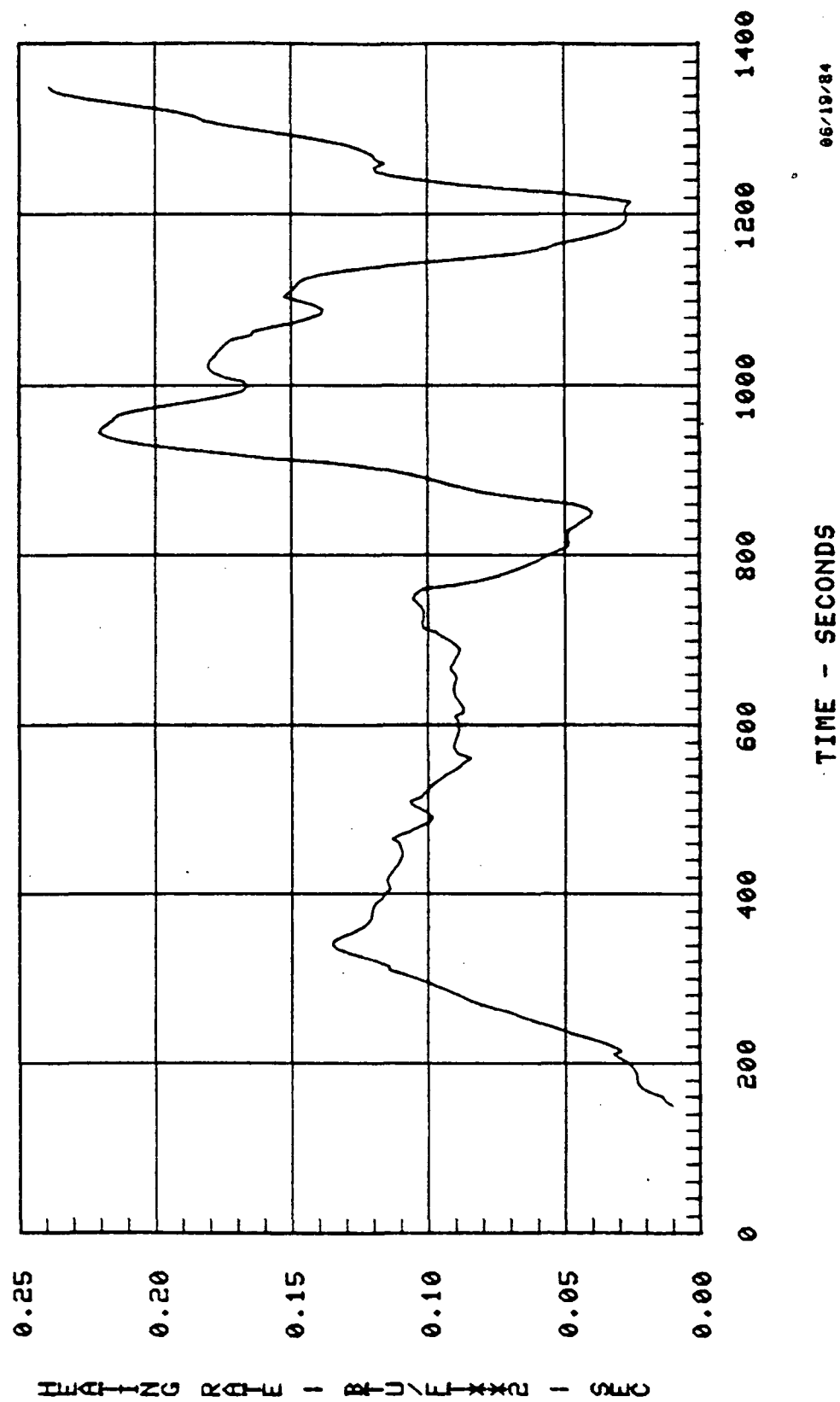


TIME - SECONDS

06/18/84

# STS-5 (107 FT LENGTH CL $X/L=0.595$ ) FLIGHT PARAMETER COMPARIS

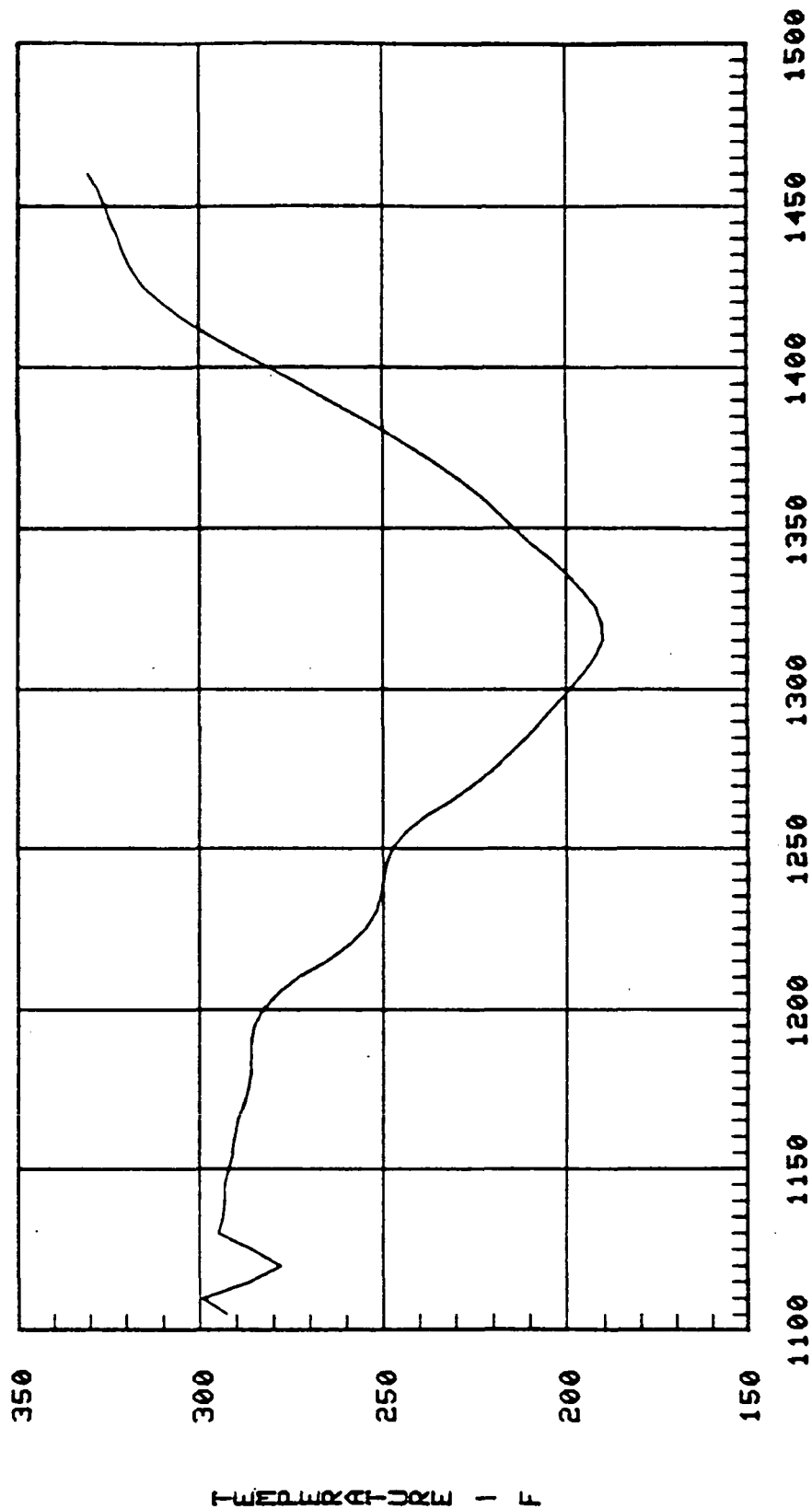
U09T95184



06/19/84

# STS-1 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

U09T9518A

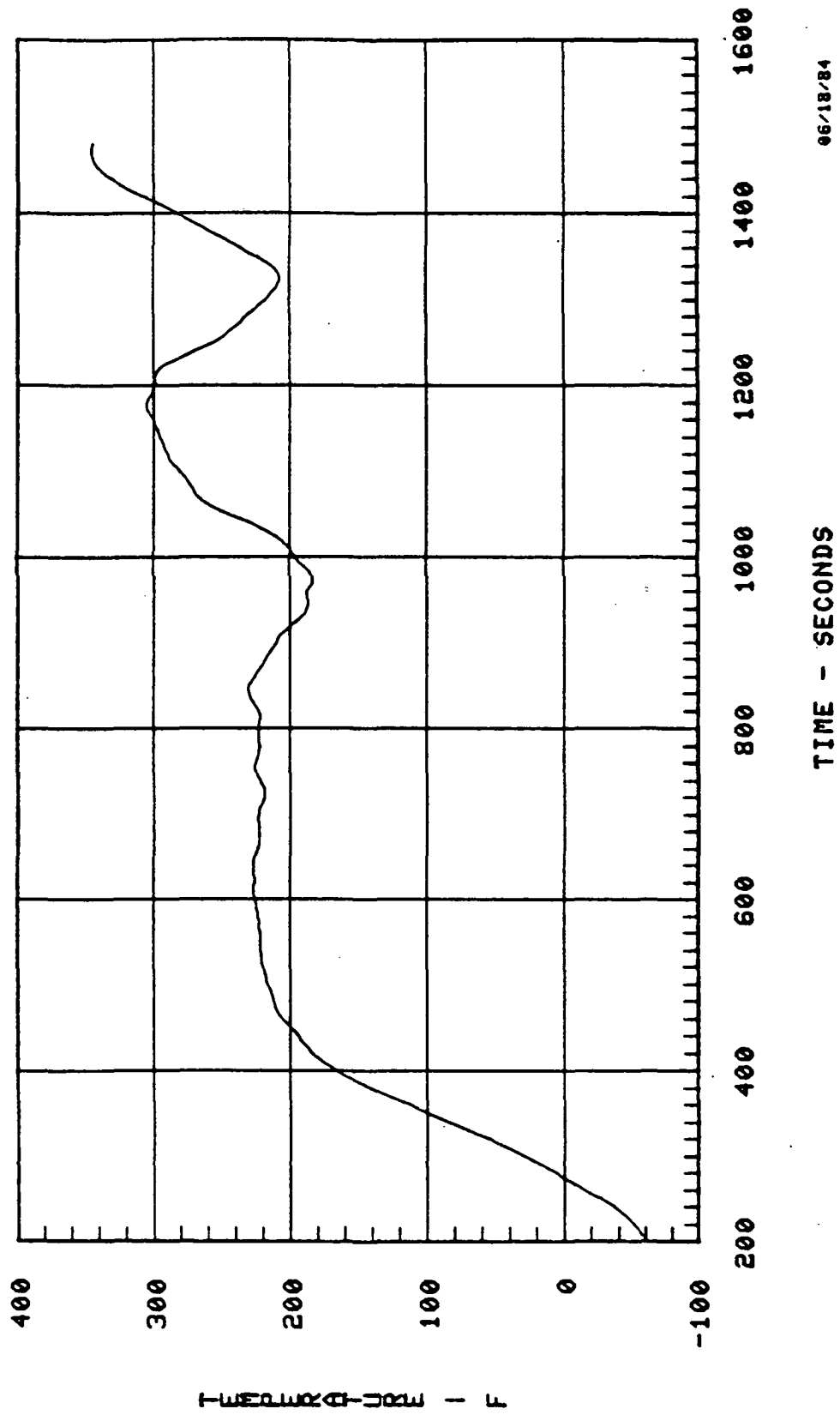


TIME - SECONDS

06/18/84

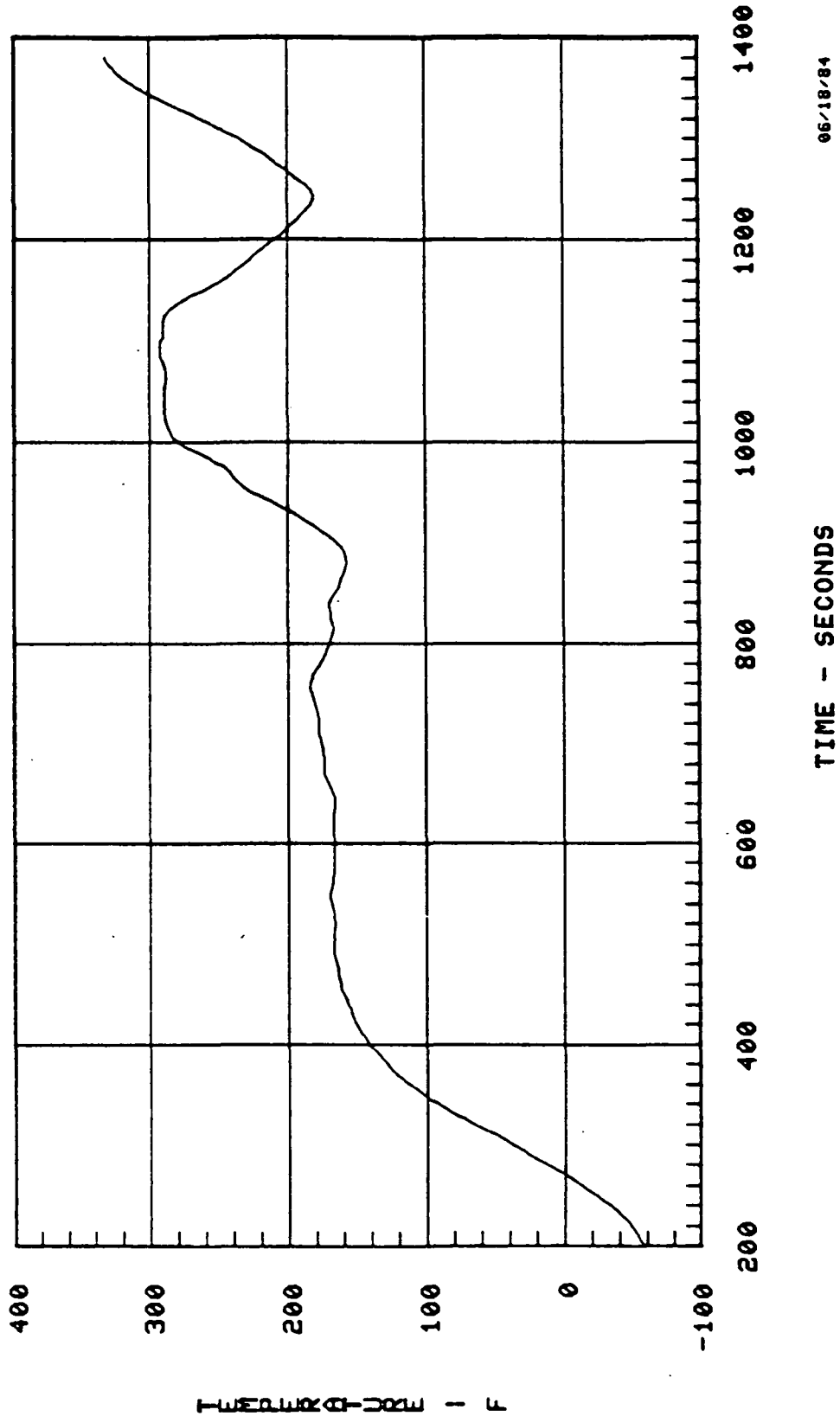
# STS-2 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

U09T9512A



# STS-3 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

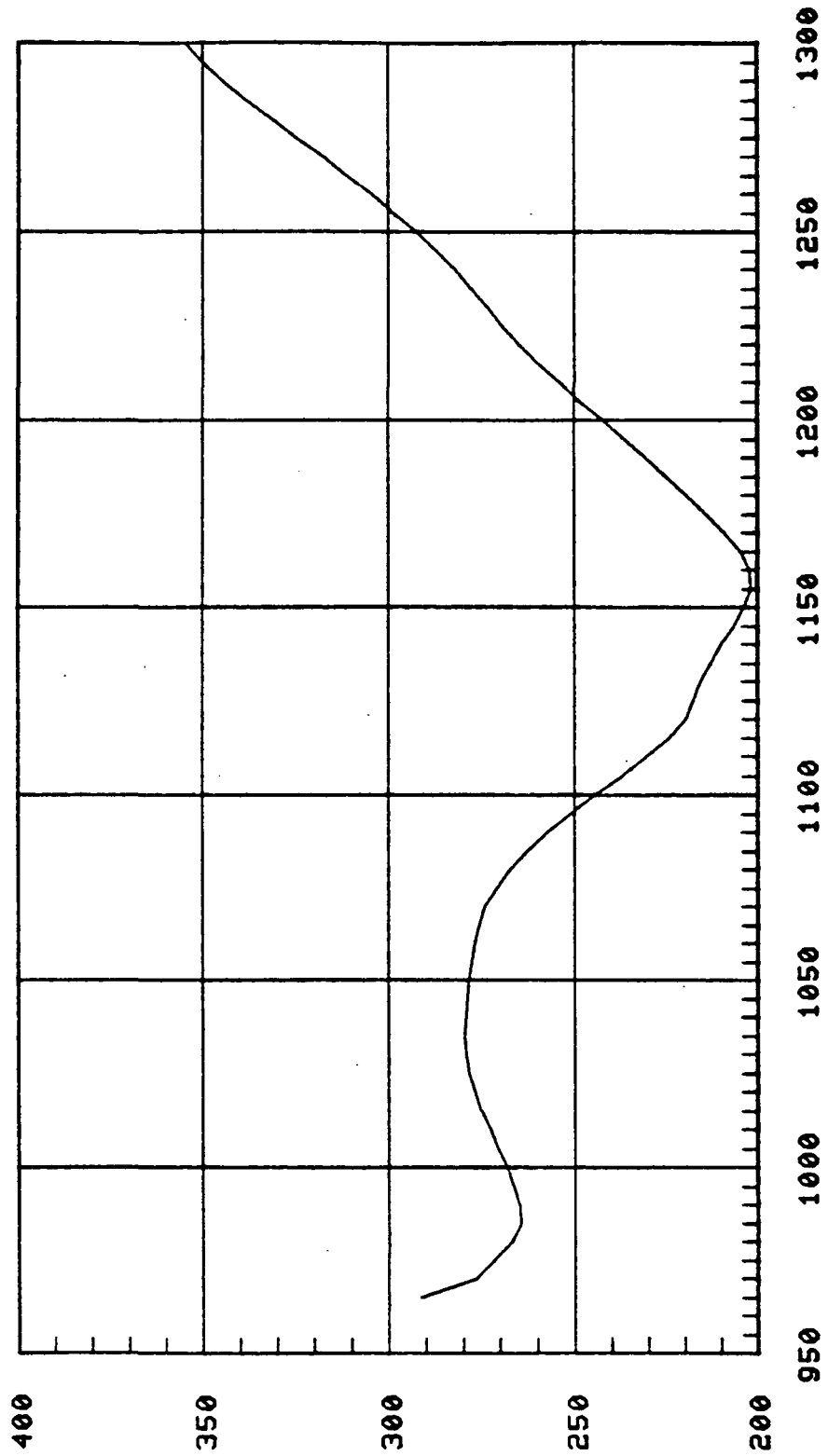
U09T9518A





# STS-4 (107 FT LENGTH CL X/L-0.595) FLIGHT PARAMETER COMPARIS

U09T95184

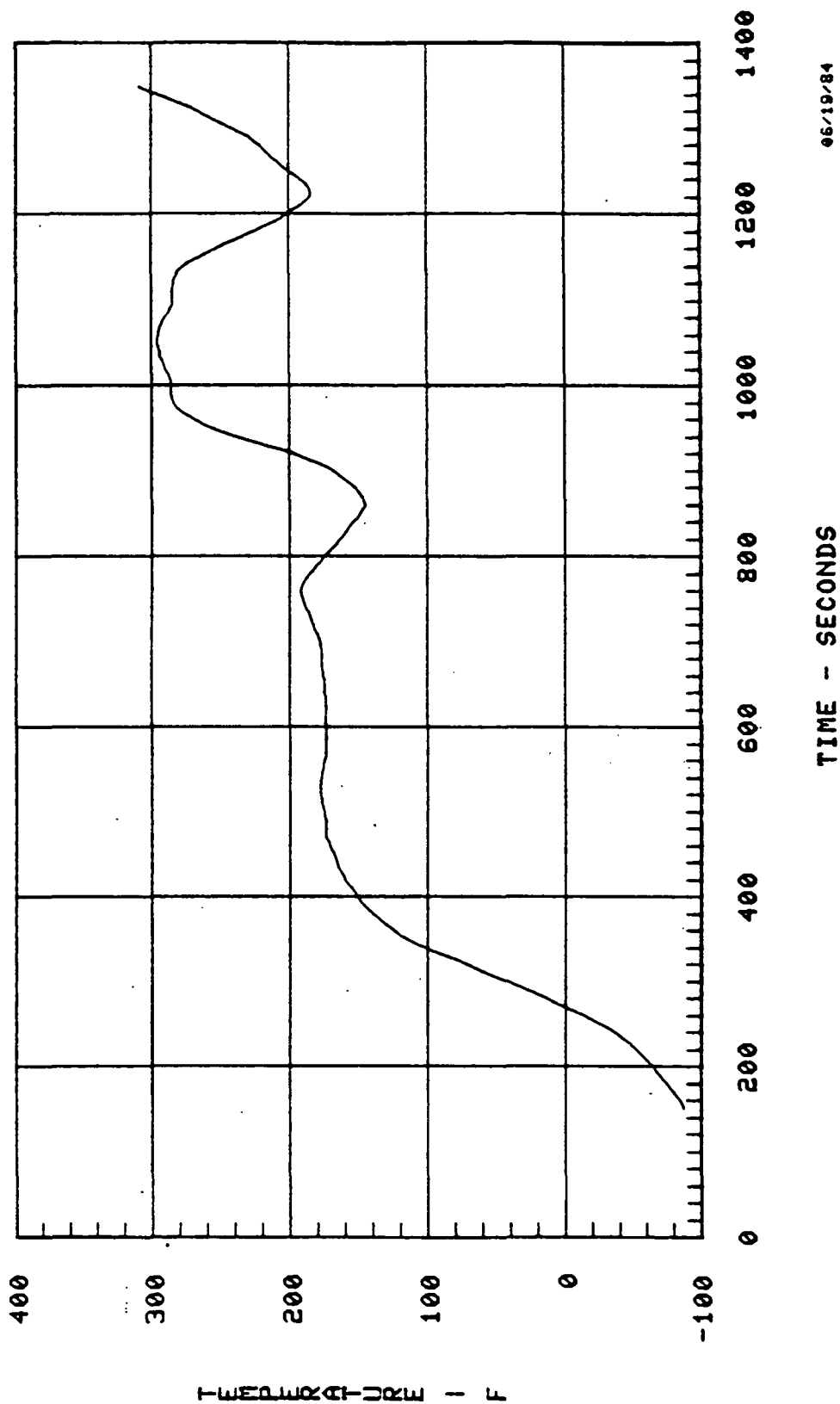


TIME - SECONDS

06/18/84

# STS-5 (107 FT LENGTH CL X/L=0.595) FLIGHT PARAMETER COMPARIS

009T9512A

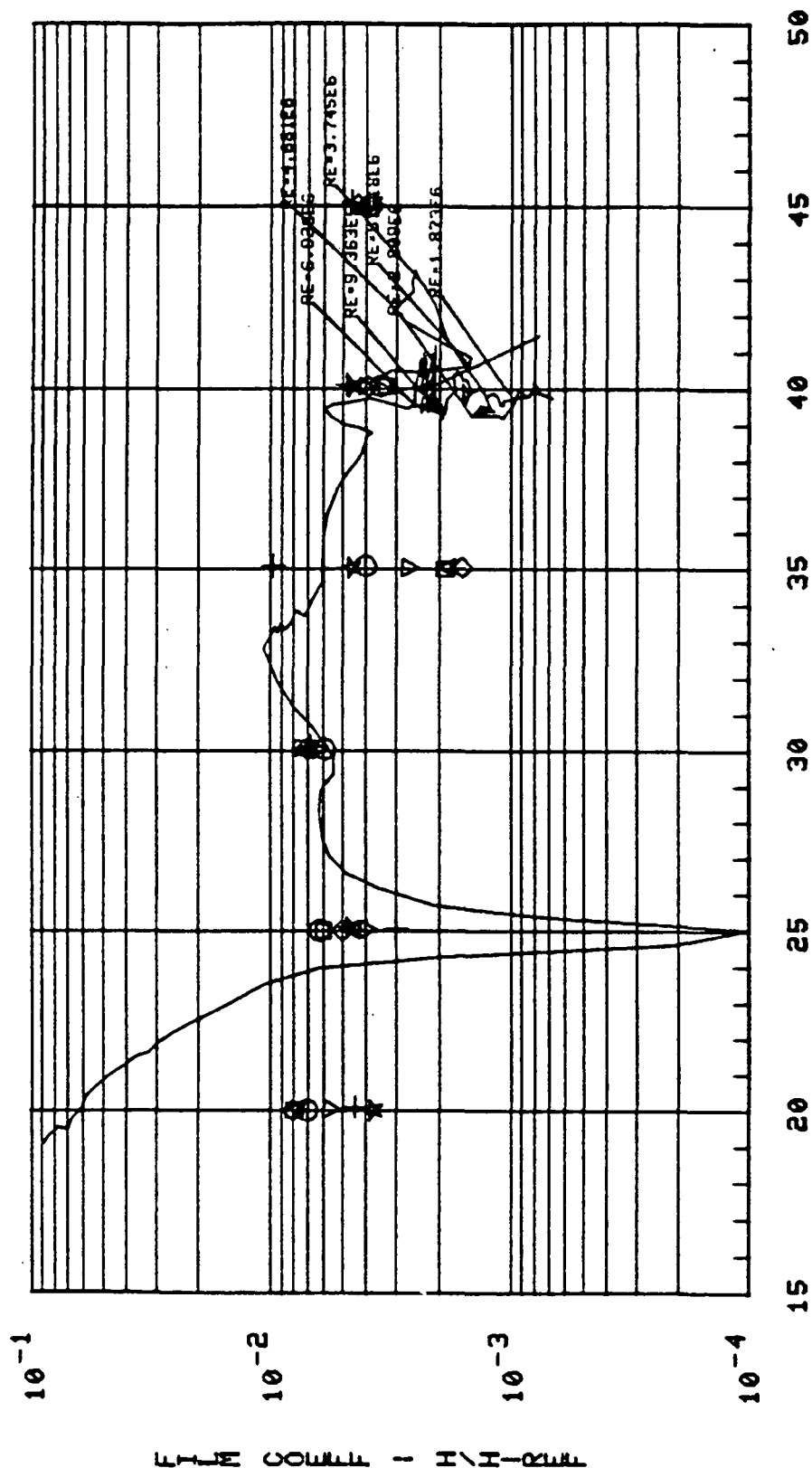


## STS-3 (107 FT LENGTH CL X/L=0.700) FLIGHT PARAMETER COMPARIS

U07T9845A/H-REF 200-1380 SEC

0H39	0.0175	SCALE	RE = 0.5
E06			
0H39	0.0175	SCALE	RE = 1.0
E06			
0H39	0.0175	SCALE	RE = 1.5
E06			
0H39	0.0175	SCALE	RE = 2.0
E06			
0H39	0.0175	SCALE	RE = 2.5
E06			
0H39	0.0175	SCALE	RE = 3.0
E06			
0H39	0.0175	SCALE	RE = 3.7
E06			

○□◇△✱+

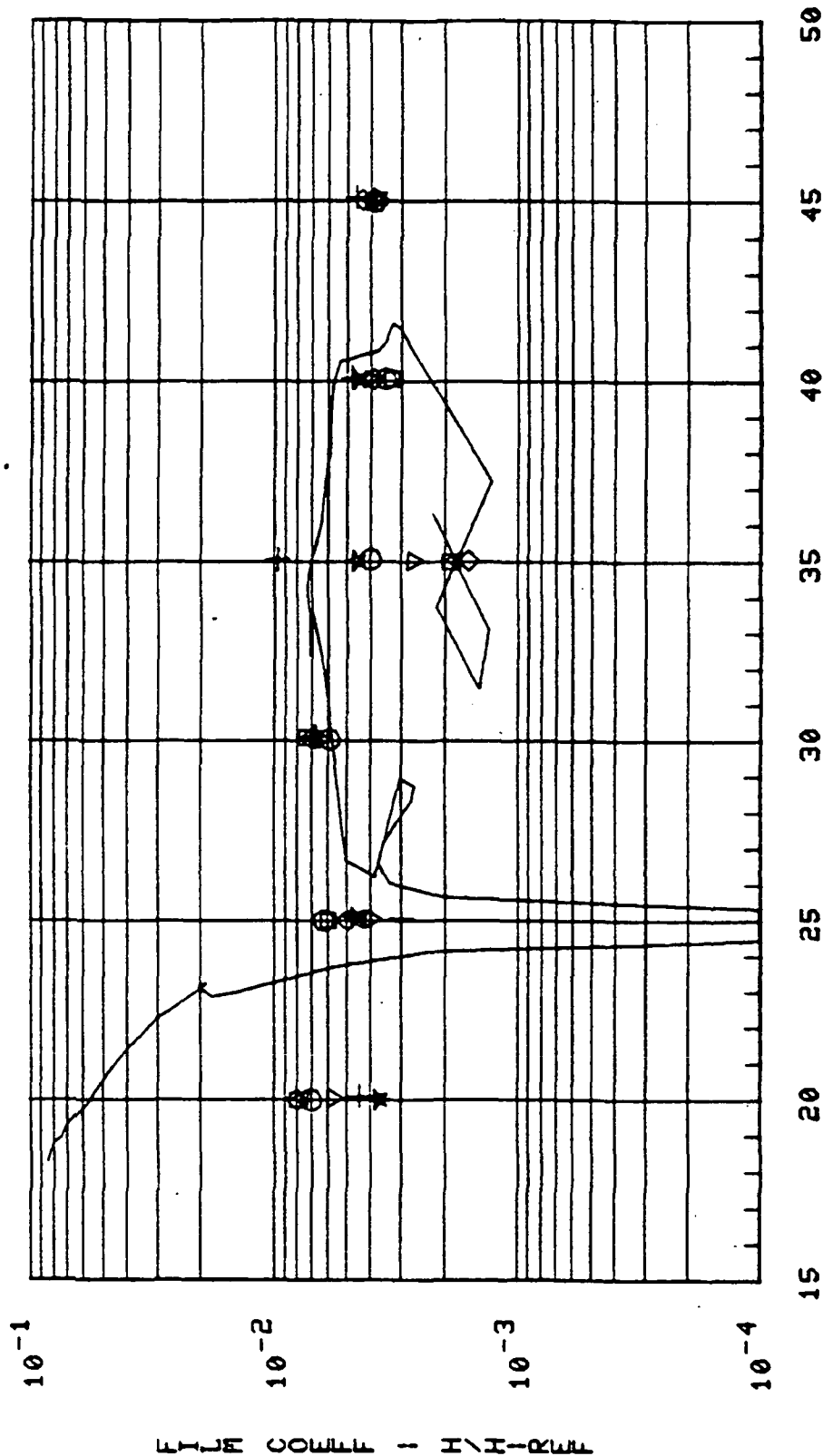


# STS-4 (107 FT LENGTH CL X/L=0.700) FLIGHT PARAMETER COMPARIS

U07T98454/H-REF 965-1300 SEC

OH39 0.0175 SCALE RE • 0.5 E06  
 OH39 0.0175 SCALE RE • 1.0 E06  
 OH39 0.0175 SCALE RE • 1.5 E06  
 OH39 0.0175 SCALE RE • 2.0 E06  
 OH39 0.0175 SCALE RE • 2.5 E06  
 OH39 0.0175 SCALE RE • 3.0 E06  
 OH39 0.0175 SCALE RE • 3.7 E06

○ □ △ × +



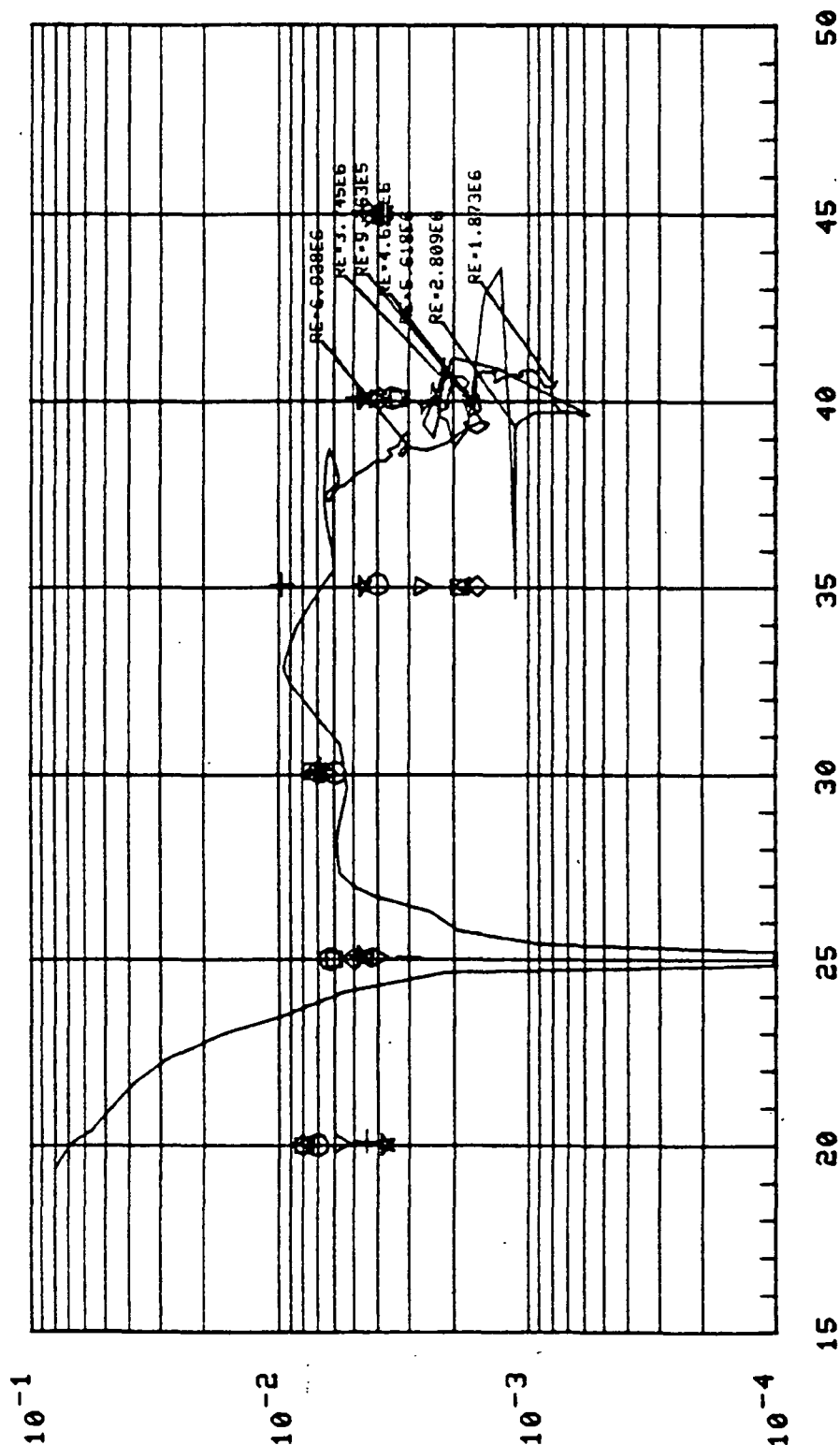
06/19/84  
BASE TIME • 16040423.000 SEC.

# STS-5 (107 FT LENGTH CL X/L=0.700) FLIGHT PARAMETER COMPARIS

U07T9845A/H-REF 150-1350 SEC

OH39 0.0175 SCALE RE = 0.5 E06  
 OH39 0.0175 SCALE RE = 1.0 E06  
 OH39 0.0175 SCALE RE = 1.5 E06  
 OH39 0.0175 SCALE RE = 2.0 E06  
 OH39 0.0175 SCALE RE = 2.5 E06  
 OH39 0.0175 SCALE RE = 3.0 E06  
 OH39 0.0175 SCALE RE = 3.7 E06

○ □ × △ ★

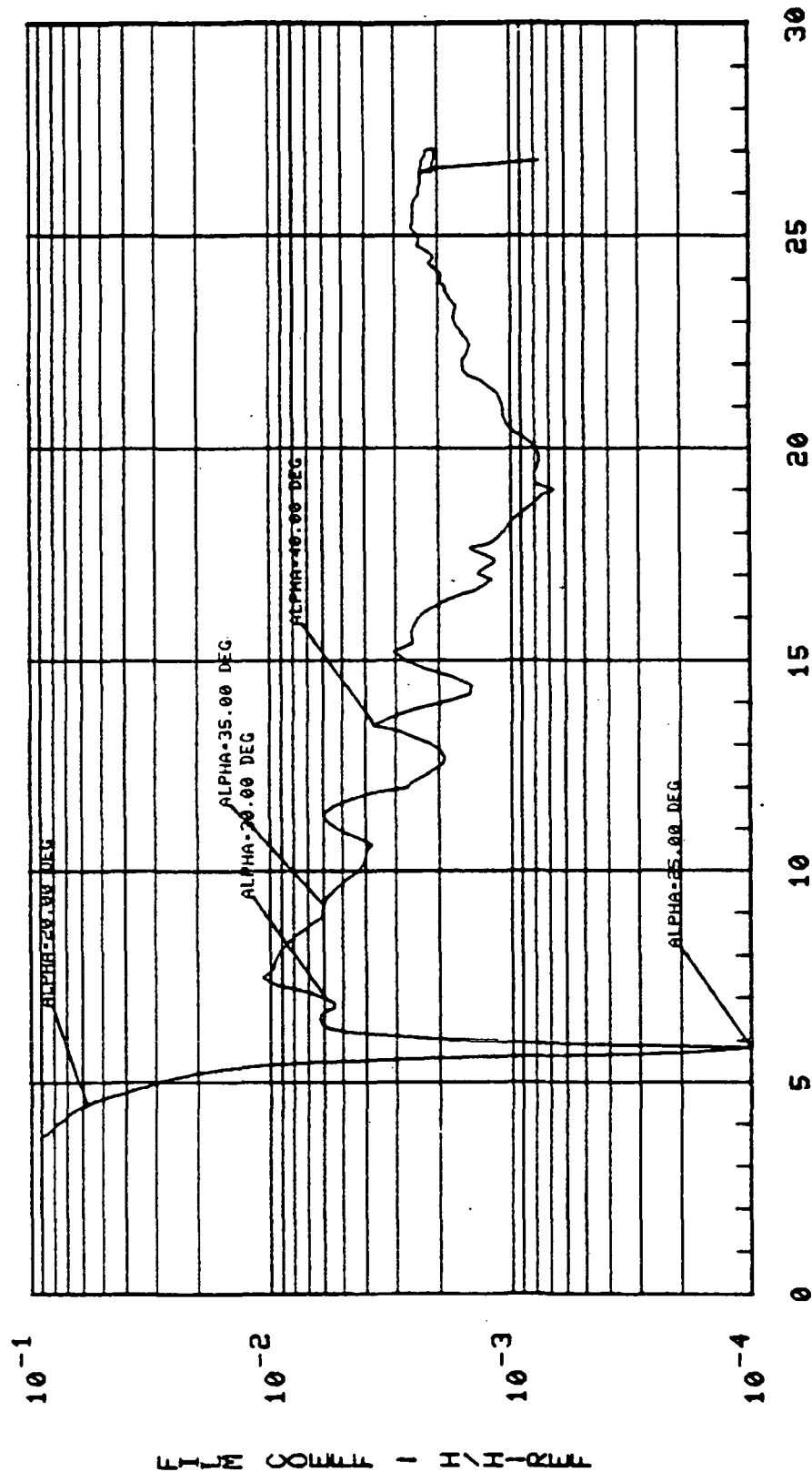


FLIGHT COEFF - H/H-REF

ANGLE-OF-ATTACK - DEG  
 06/19/84  
 BASE TIME = 27698591.000 SEC.

# STS-3 (107 FT LENGTH CL X/L=0.700) FLIGHT PARAMETER COMPARIS

U07T9845A/H-REF 200-1300 SEC

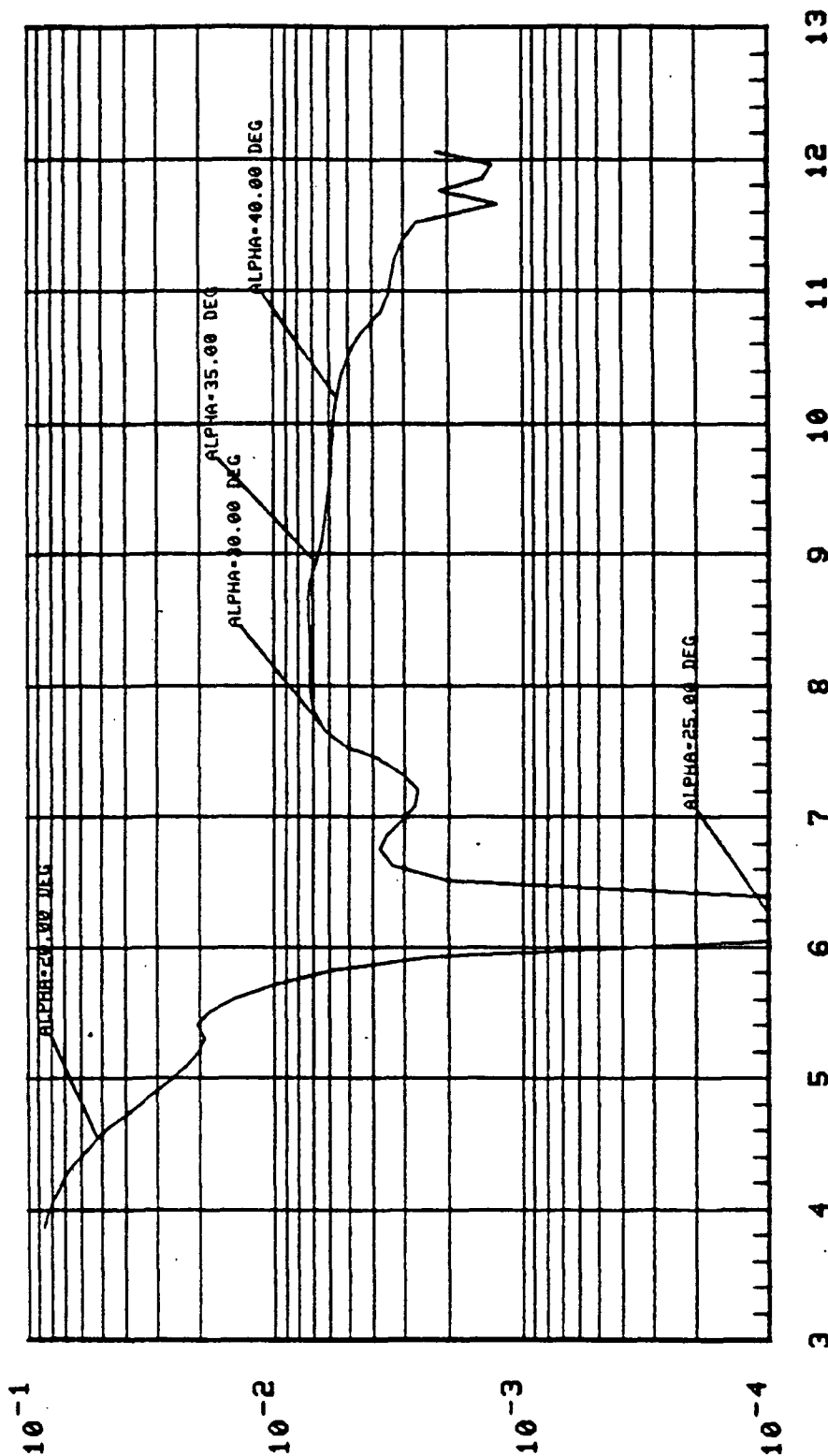


06/18/84  
BASE TIME - 07745684.000 SEC.

MACH NUMBER

# STS-4 (107 FT LENGTH CL X/L=0.700) FLIGHT PARAMETER COMPARIS

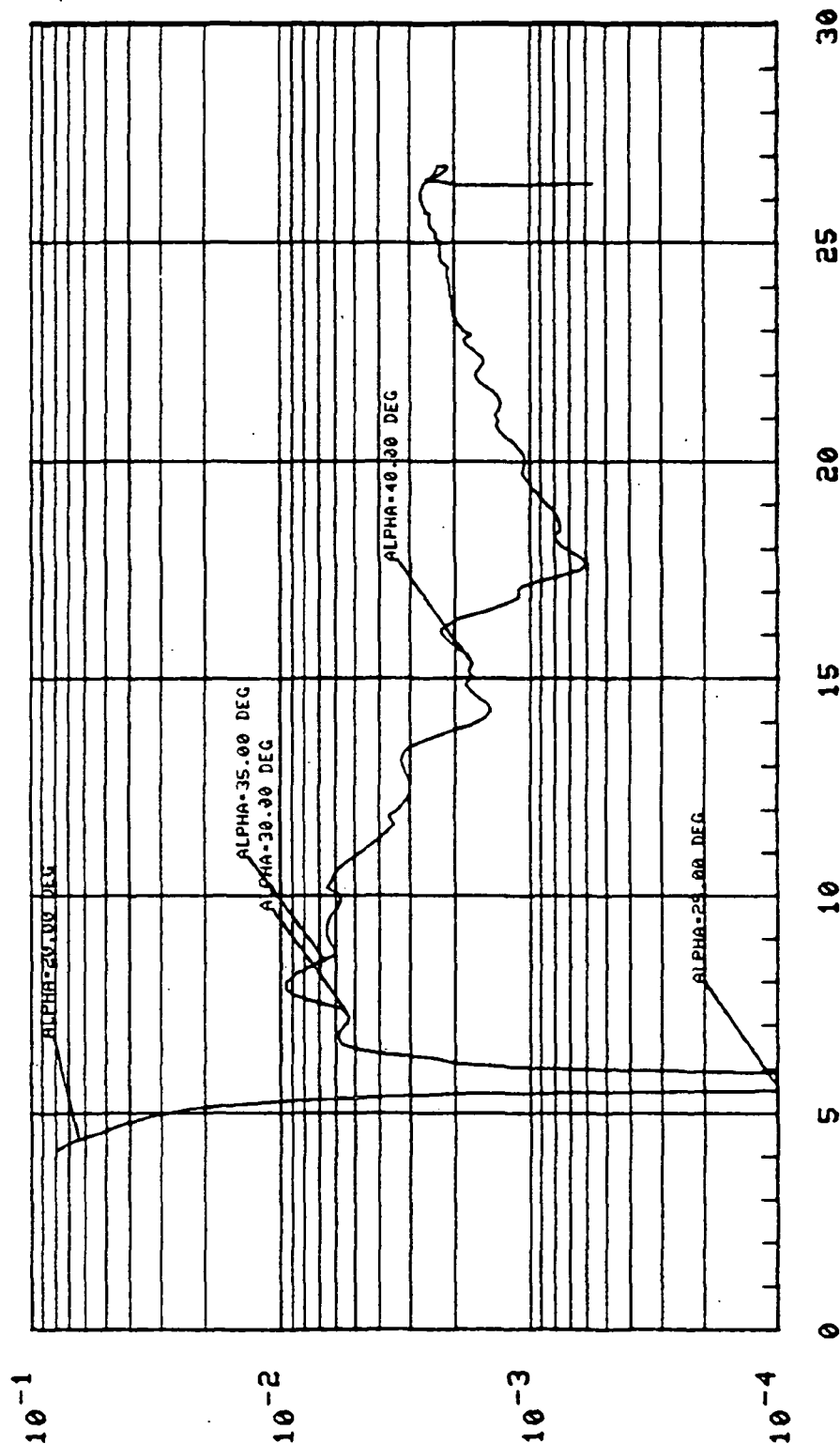
U07T9845A/H-REF 965-1300 SEC



FLIGHT COEFF - H/H-REF

# STS-5 (107 FT LENGTH CL X/L=0.700) FLIGHT PARAMETER COMPARIS

U07T98454/H-REF 150-1350 SEC



FLIGHT COEFFICIENT - H/H-REF

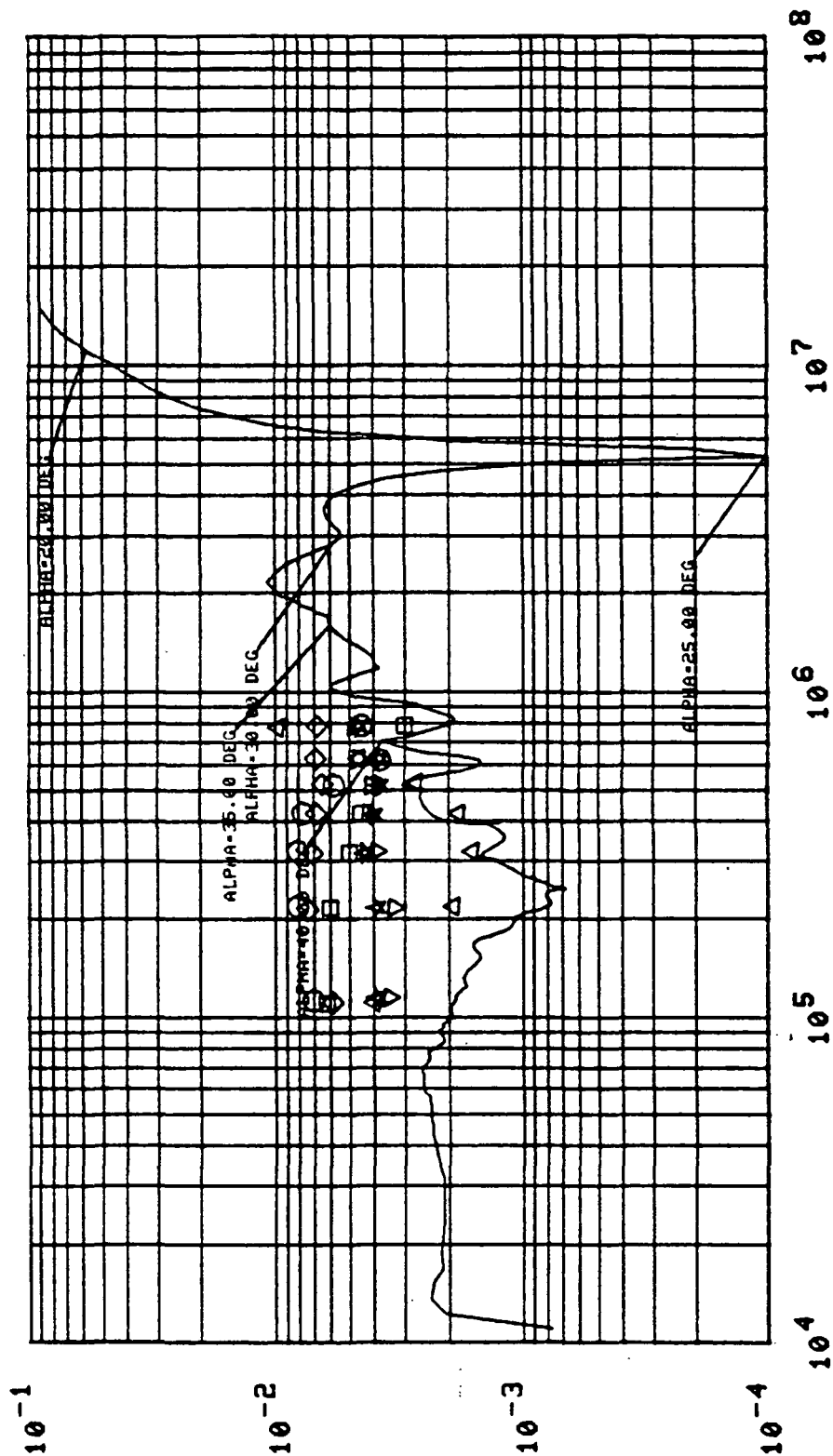


# STS-3 (107 FT LENGTH CL X/L=0.700) FLIGHT PARAMETER COMPARIS

U07T5845A/H-REF 200-1380 SEC

- QH39 ALPHA - 20 DEGREES
- QH39 ALPHA - 25 DEGREES
- QH39 ALPHA - 30 DEGREES
- QH39 ALPHA - 35 DEGREES
- QH39 ALPHA - 40 DEGREES
- QH39 ALPHA - 45 DEGREES

○ □ × △ ★



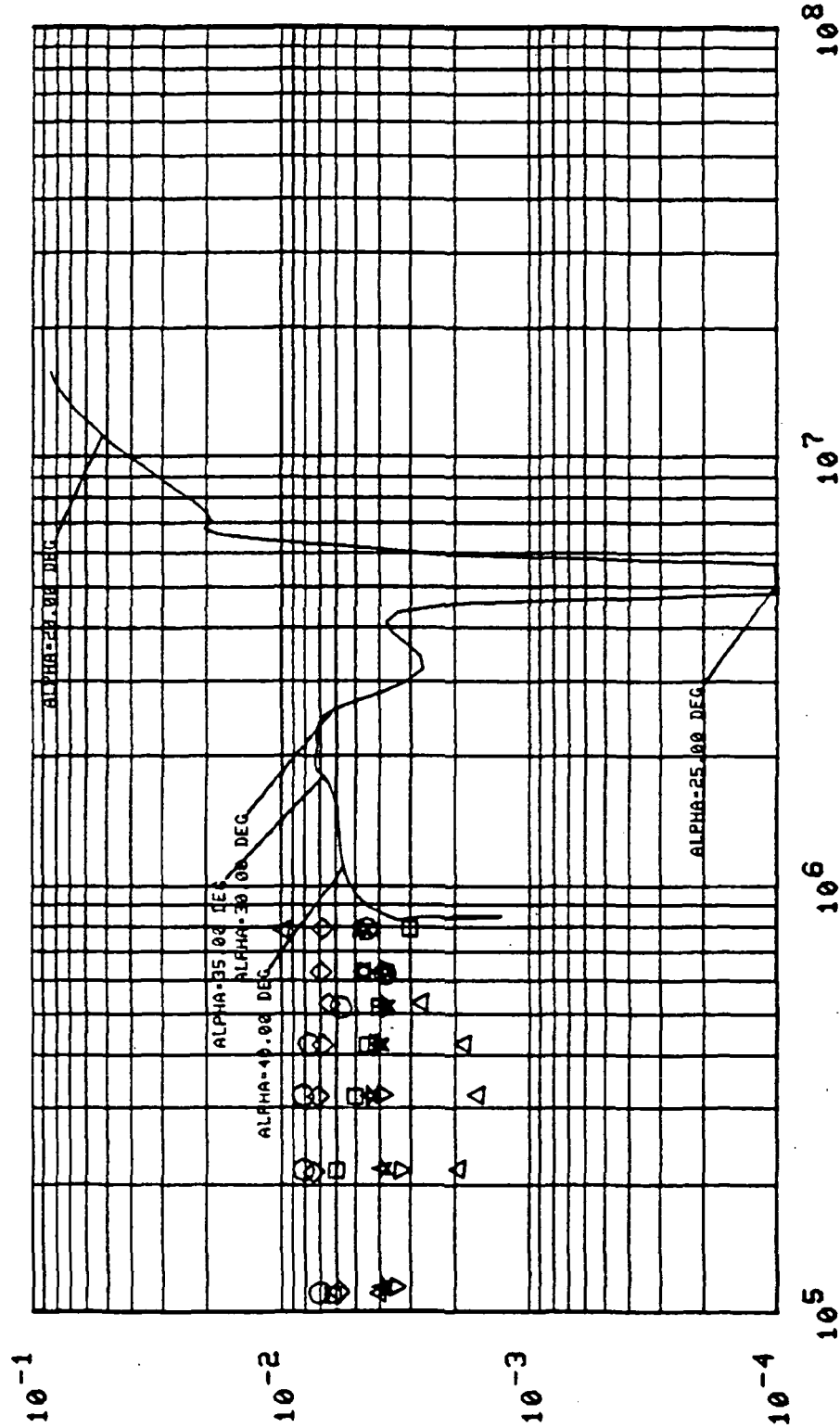
REYNOLDS NUMBER (NS) 06/18/84 BASE TIME - 07745684.000 SEC.

# STS-4 (107 FT LENGTH CL X/L=0.700) FLIGHT PARAMETER COMPARIS

OH39 ALPHA - 20 DEGREES  
 OH39 ALPHA - 25 DEGREES  
 OH39 ALPHA - 30 DEGREES  
 OH39 ALPHA - 35 DEGREES  
 OH39 ALPHA - 40 DEGREES  
 OH39 ALPHA - 45 DEGREES

067T98454/H-REF 985-1300 SEC

○ □ × ★



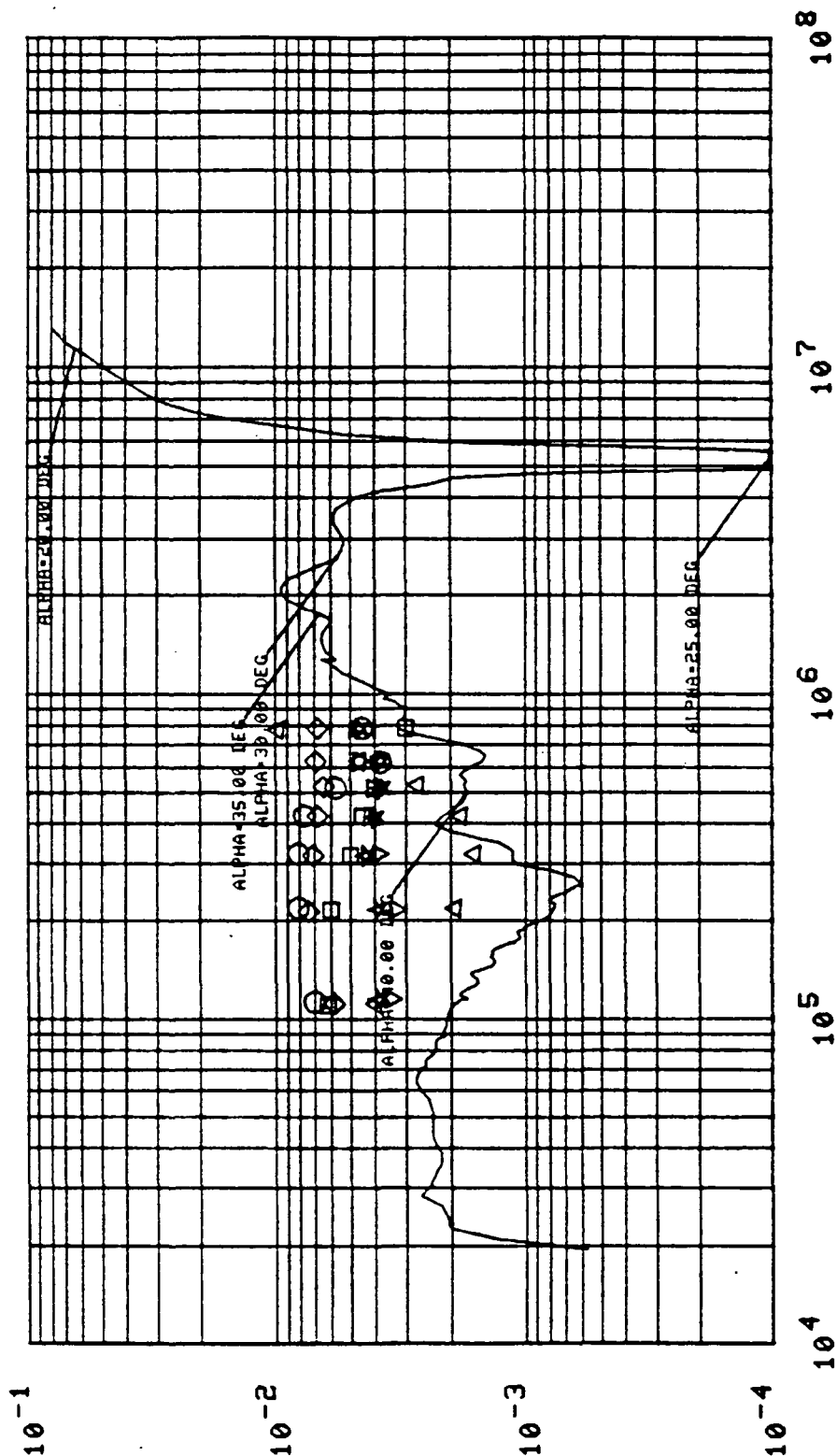
REYNOLDS NUMBER (NS)  
 BASE TIME - 16040423.000 SEC.  
 06/19/84

# STS-5 (107 FT LENGTH CL X/L=0.700) FLIGHT PARAMETER COMPARIS

- OH39 ALPHA - 20 DEGREES
- OH39 ALPHA - 25 DEGREES
- OH39 ALPHA - 30 DEGREES
- OH39 ALPHA - 35 DEGREES
- OH39 ALPHA - 40 DEGREES
- OH39 ALPHA - 45 DEGREES

U0779845A/H-REF 150-1350 SEC

□ ◇ ×

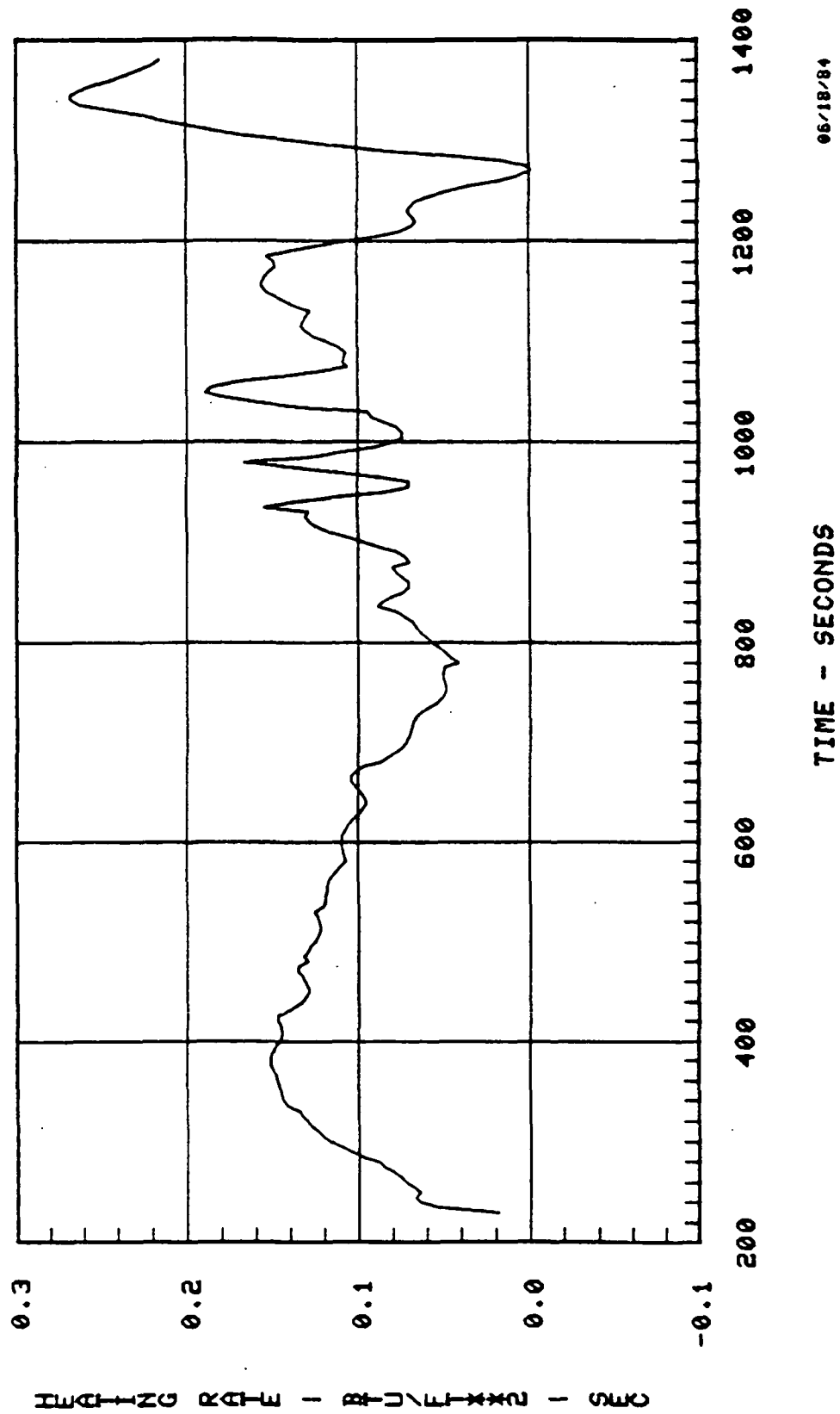


FILM COEFF - H/H-REF

REYNOLDS NUMBER (NS) BASE TIME - 27698591.000 SEC. 06/19/84

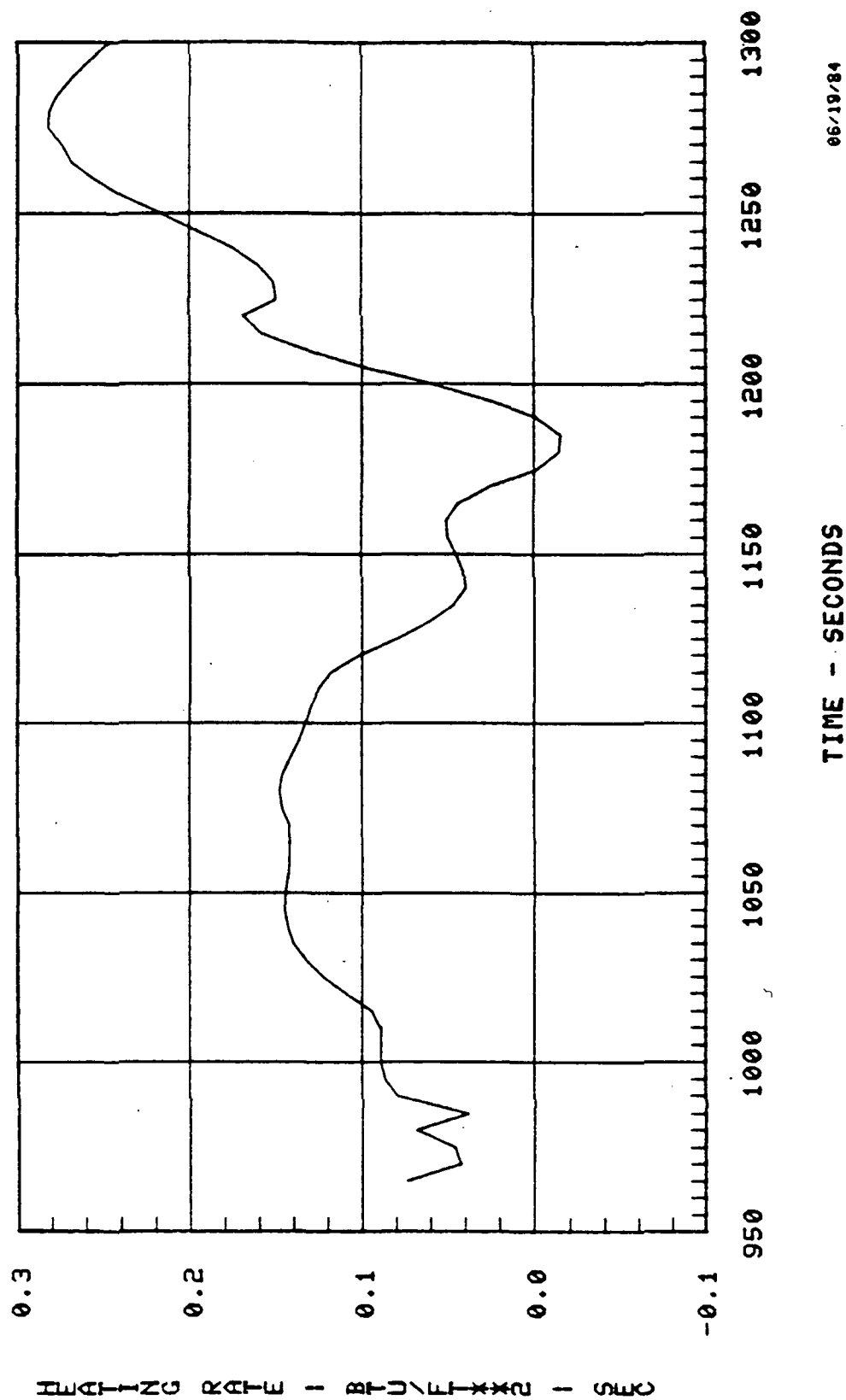
# STS-3 (107 FT LENGTH CL X/L=0.700) FLIGHT PARAMETER COMPARIS

U07T98456



# STS-4 (107 FT LENGTH CL $X/L=0.700$ ) FLIGHT PARAMETER COMPARIS

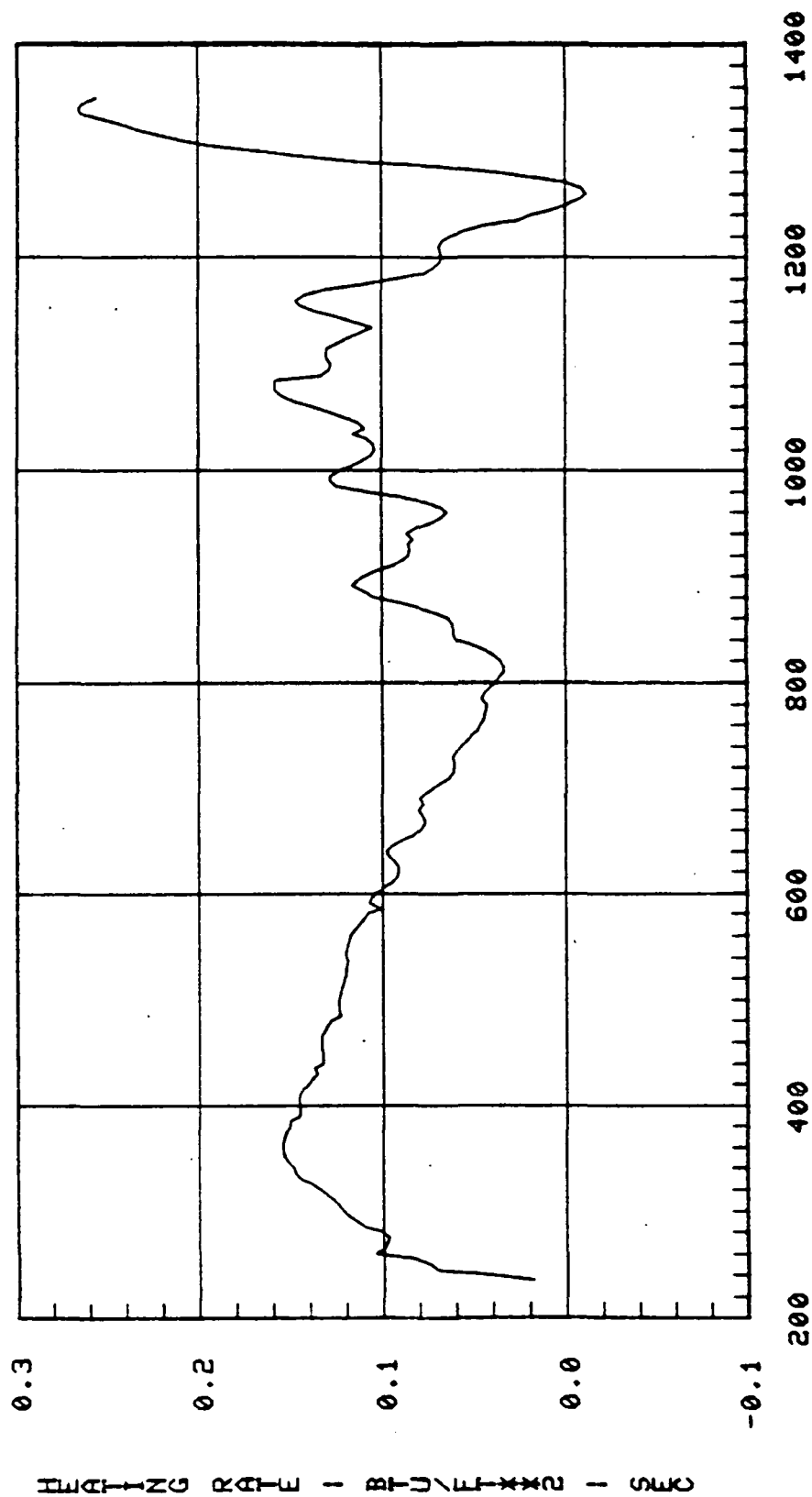
007T9845A



06/19/84

# STS-5 (107 FT LENGTH CL X/L=0.700) FLIGHT PARAMETER COMPARIS

U37T98454

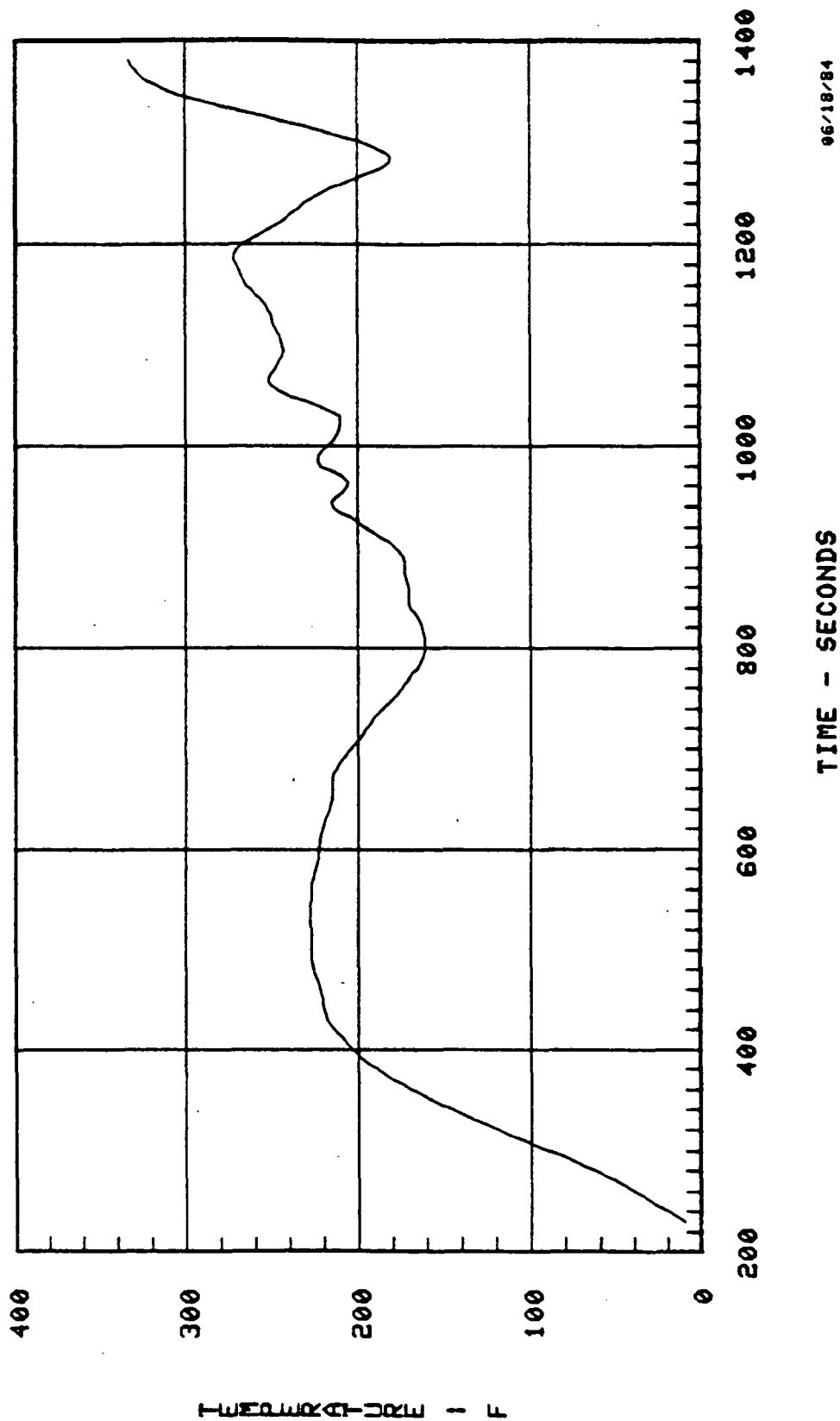


TIME - SECONDS

06/19/84

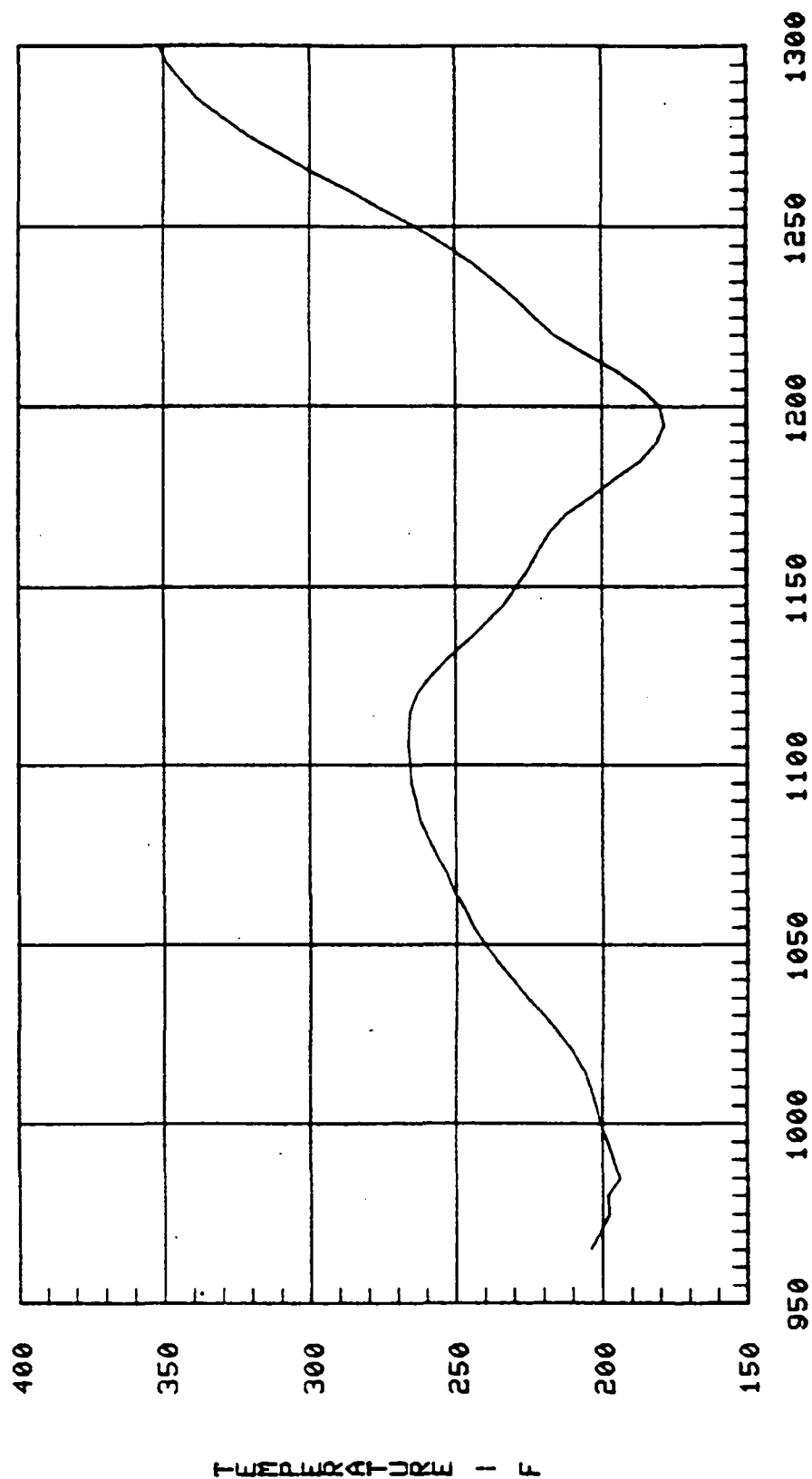
# STS-3 (107 FT LENGTH CL X/L=0.700) FLIGHT PARAMETER COMPARIS

U07T9845A



# STS-4 (107 FT LENGTH CL X/L=0.700) FLIGHT PARAMETER COMPARIS

U07T9845A



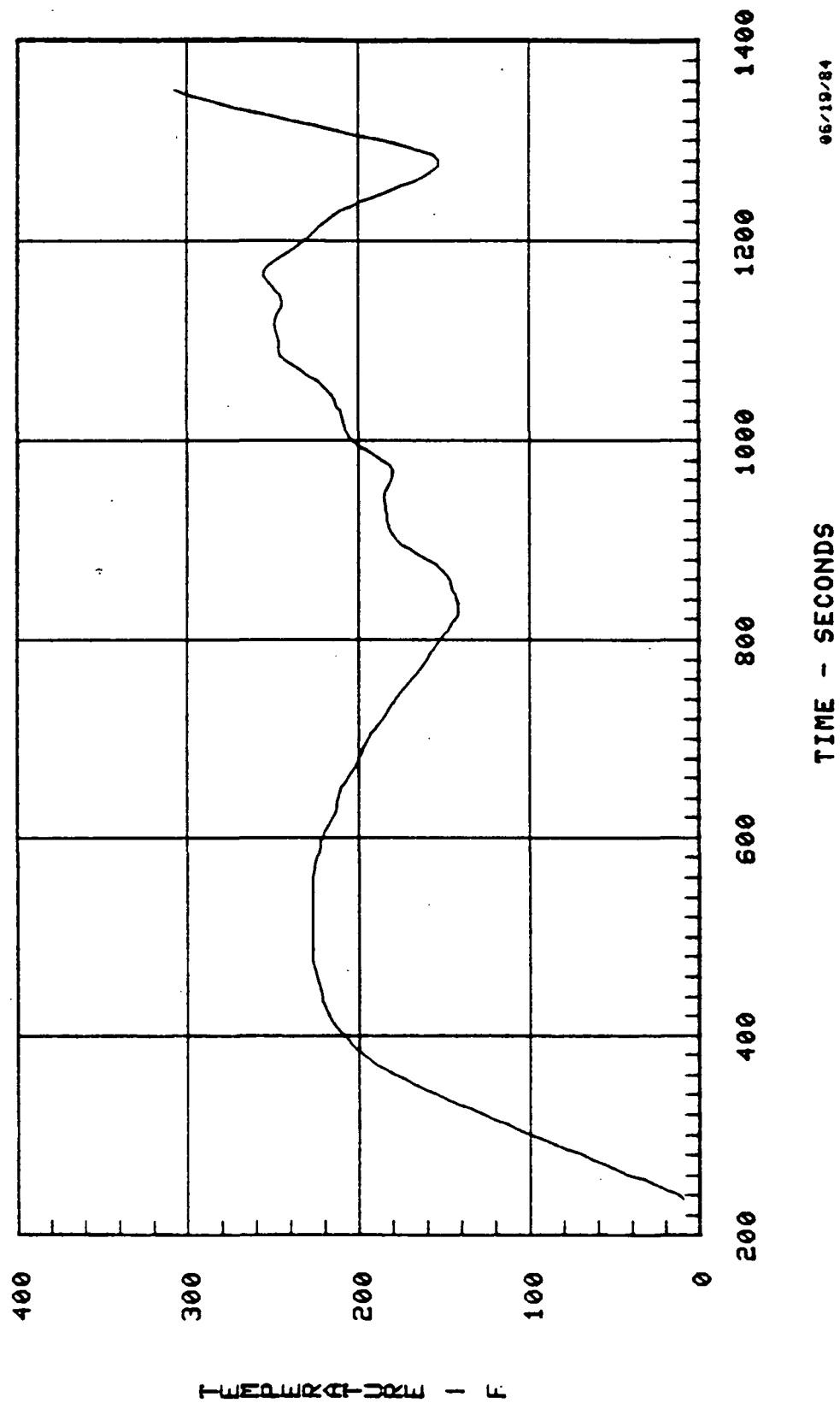
TIME - SECONDS

06/19/84



# STS-5 (107 FT LENGTH CL X/L=0.700) FLIGHT PARAMETER COMPARIS

U07T9845A



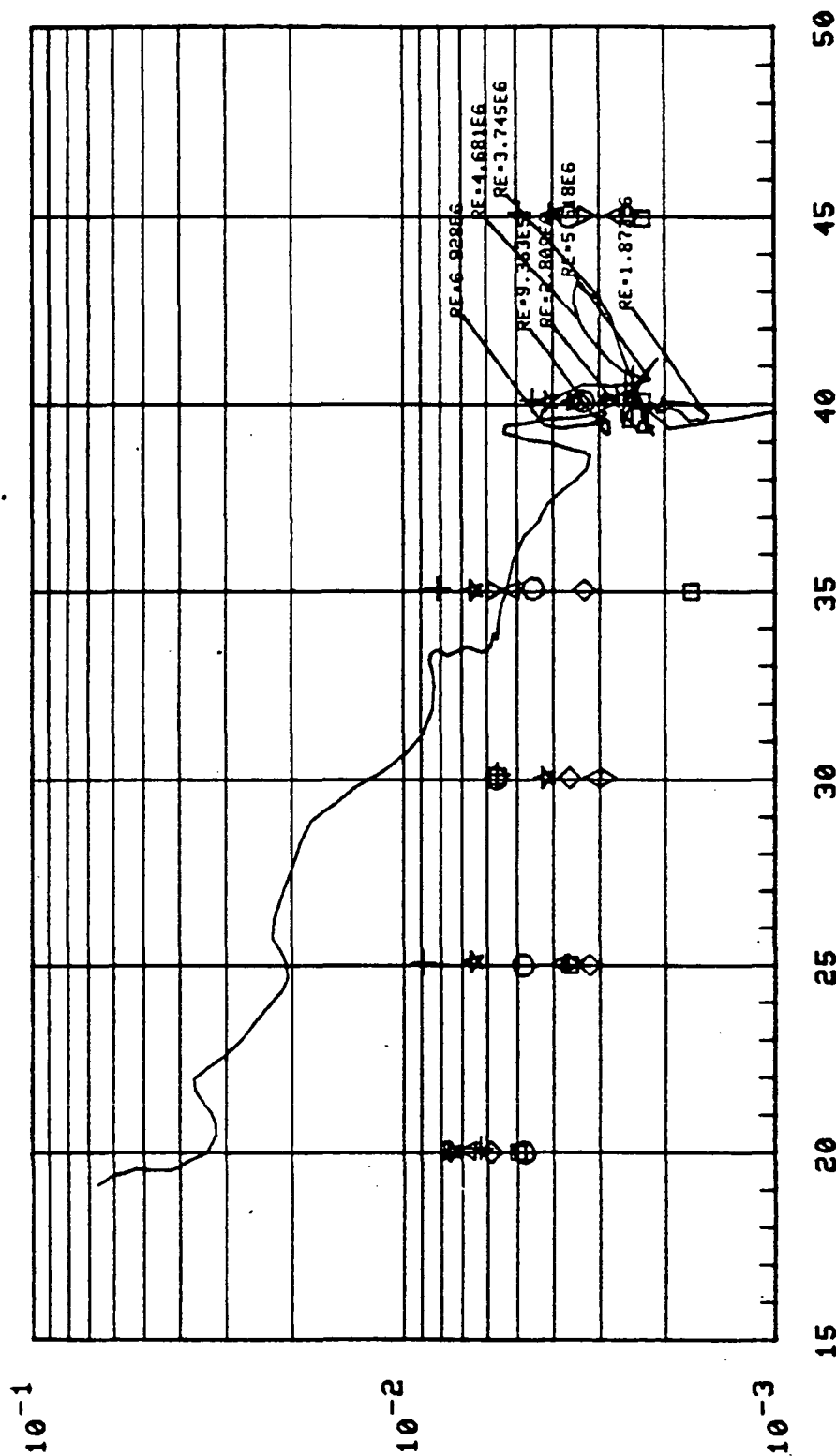
06/19/84

# STS-3 (107 FT LENGTH CL X/L=0.791) FLIGHT PARAMETER COMPARIS

007152324/H-REF 200-1380 SEC

OH39 0.0175 SCALE RE - 0.5 E06  
 OH39 0.0175 SCALE RE - 1.0 E06  
 OH39 0.0175 SCALE RE - 1.5 E06  
 OH39 0.0175 SCALE RE - 2.0 E06  
 OH39 0.0175 SCALE RE - 2.5 E06  
 OH39 0.0175 SCALE RE - 3.0 E06  
 OH39 0.0175 SCALE RE - 3.7 E06

○ × △ +



FILE COME - H/H-REF

06/18/84  
 BASE TIME - 07745684.000 SEC.

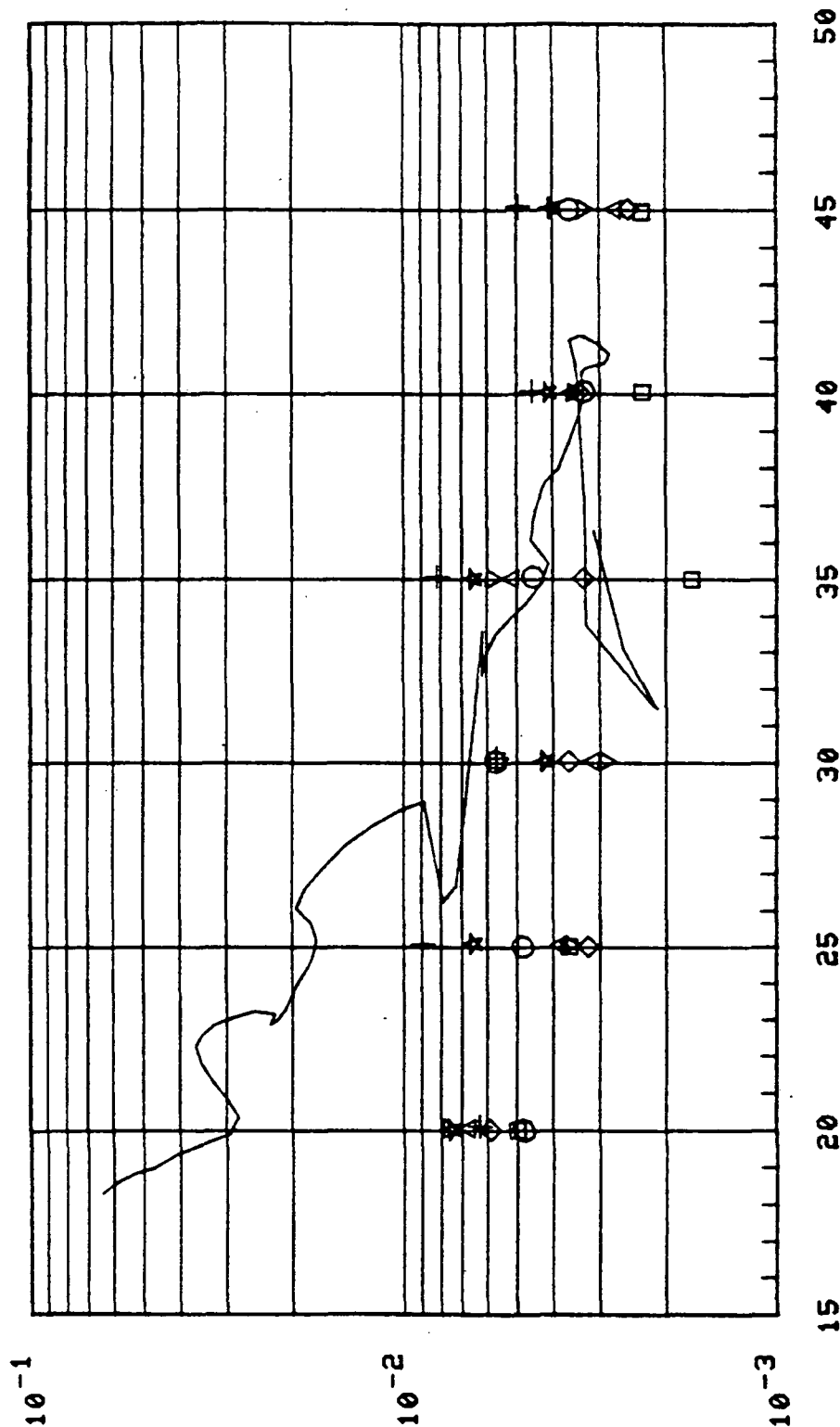
ANGLE-OF-ATTACK - DEG

# STS-4 (107 FT LENGTH CL X/L=0.791) FLIGHT PARAMETER COMPARIS

007T02324/H-REF 965-1300 SEC

OH39 0.0175 SCALE RE - 0.5 E06  
 OH39 0.0175 SCALE RE - 1.0 E06  
 OH39 0.0175 SCALE RE - 1.5 E06  
 OH39 0.0175 SCALE RE - 2.0 E06  
 OH39 0.0175 SCALE RE - 2.5 E06  
 OH39 0.0175 SCALE RE - 3.0 E06  
 OH39 0.0175 SCALE RE - 3.7 E06

○ □ ◇ △ ★



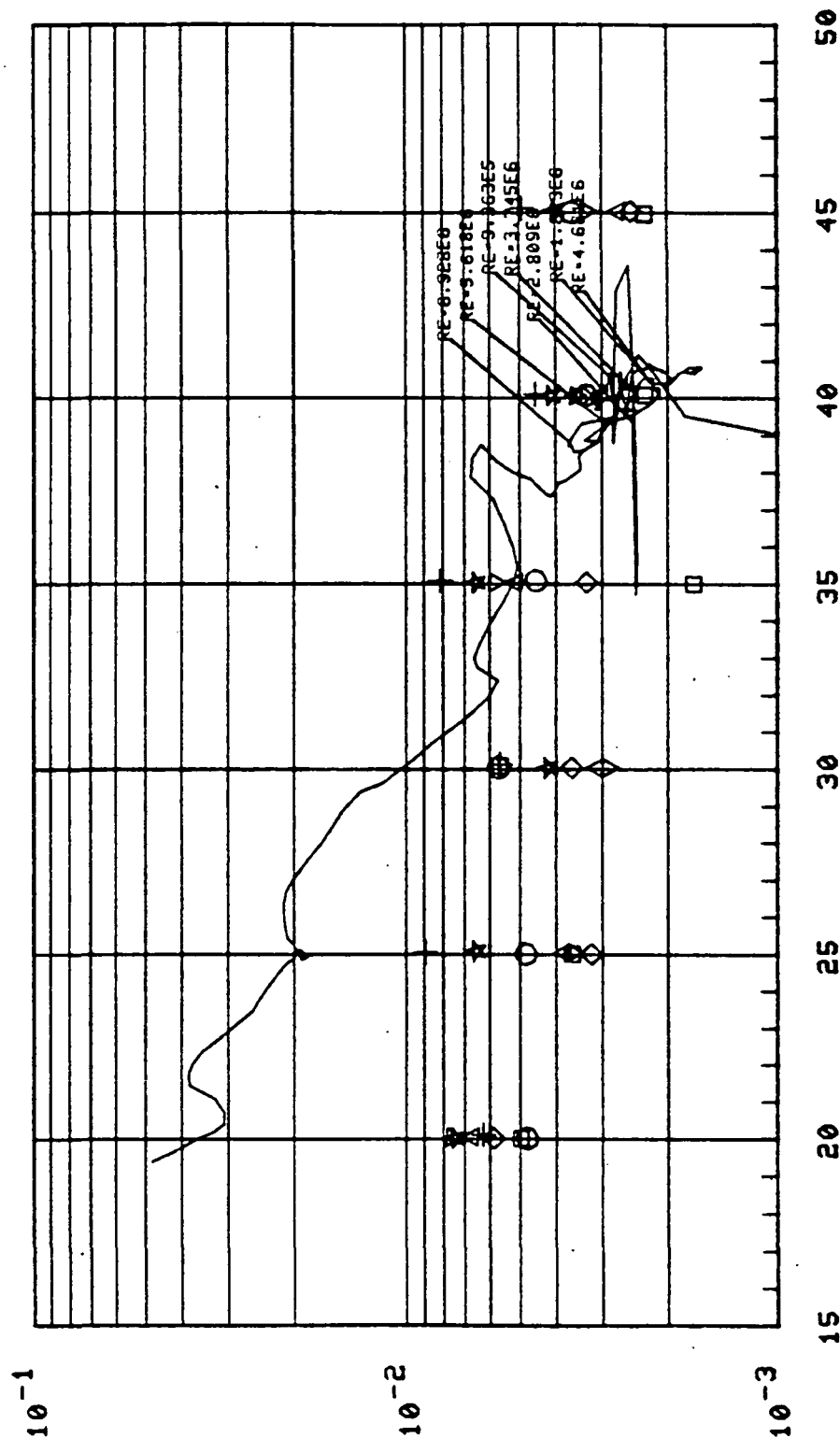
FILE CODE - H/H-REF

# STS-5 (107 FT LENGTH CL X/L=0.791) FLIGHT PARAMETER COMPARIS

U07T9232A/H-REF 150-1350 SEC

OH39 0.0175 SCALE RE - 0.5 E06  
 OH39 0.0175 SCALE RE - 1.0 E06  
 OH39 0.0175 SCALE RE - 1.5 E06  
 OH39 0.0175 SCALE RE - 2.0 E06  
 OH39 0.0175 SCALE RE - 2.5 E06  
 OH39 0.0175 SCALE RE - 3.0 E06  
 OH39 0.0175 SCALE RE - 3.7 E06

O  
 X  
 +

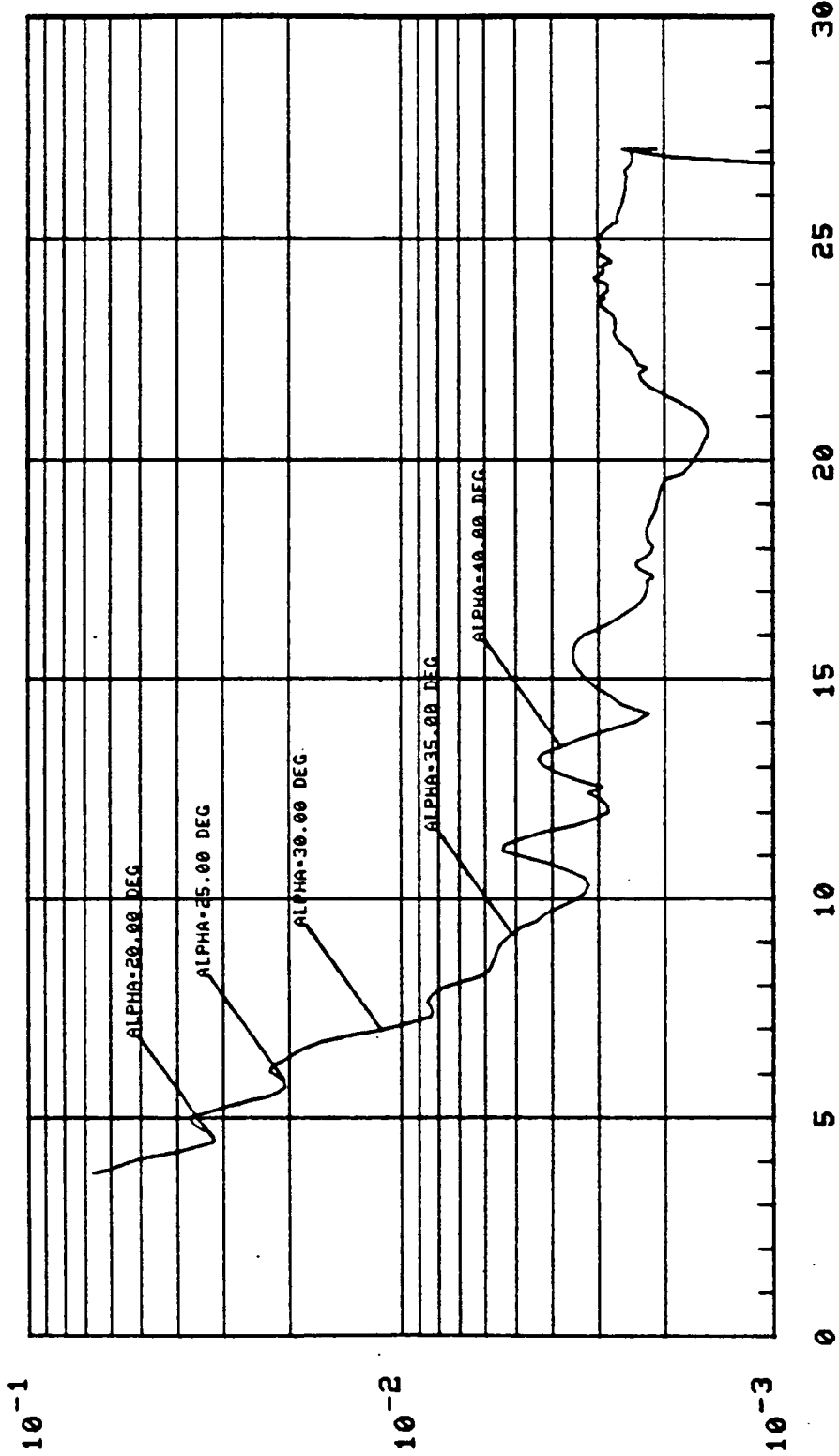


FLIGHT COEFF - H/H-REF

ANGLE-OF-ATTACK - DEG  
 06/19/84  
 BASE TIME - 27698591.000 SEC.

# STS-3 (107 FT LENGTH CL X/L=0.791) FLIGHT PARAMETER COMPARIS

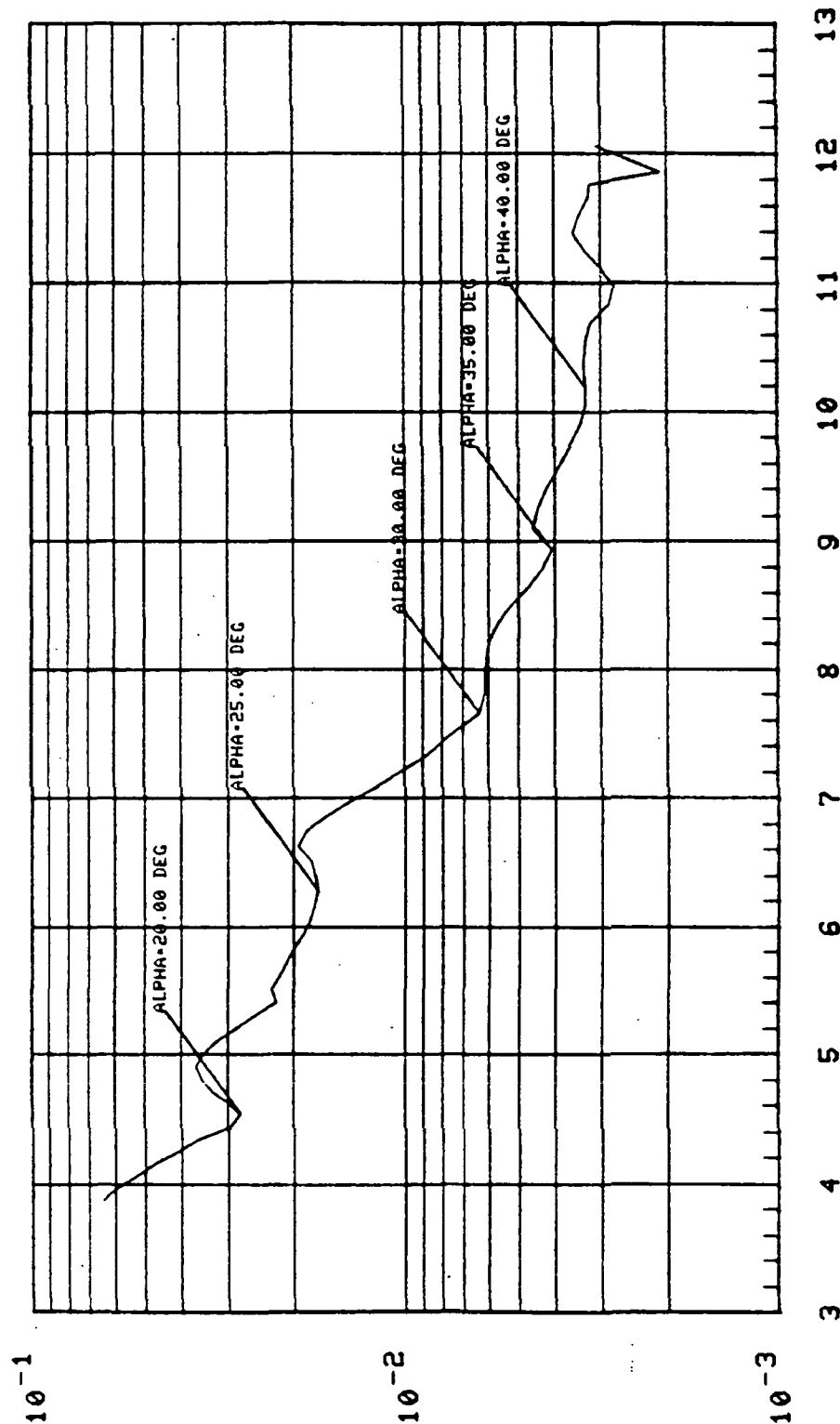
U07T9232A/H-REF 200-1380 SEC



FLIGHT COEFF - H/H-REF

# STS-4 (107 FT LENGTH CL X/L=0.791) FLIGHT PARAMETER COMPARIS

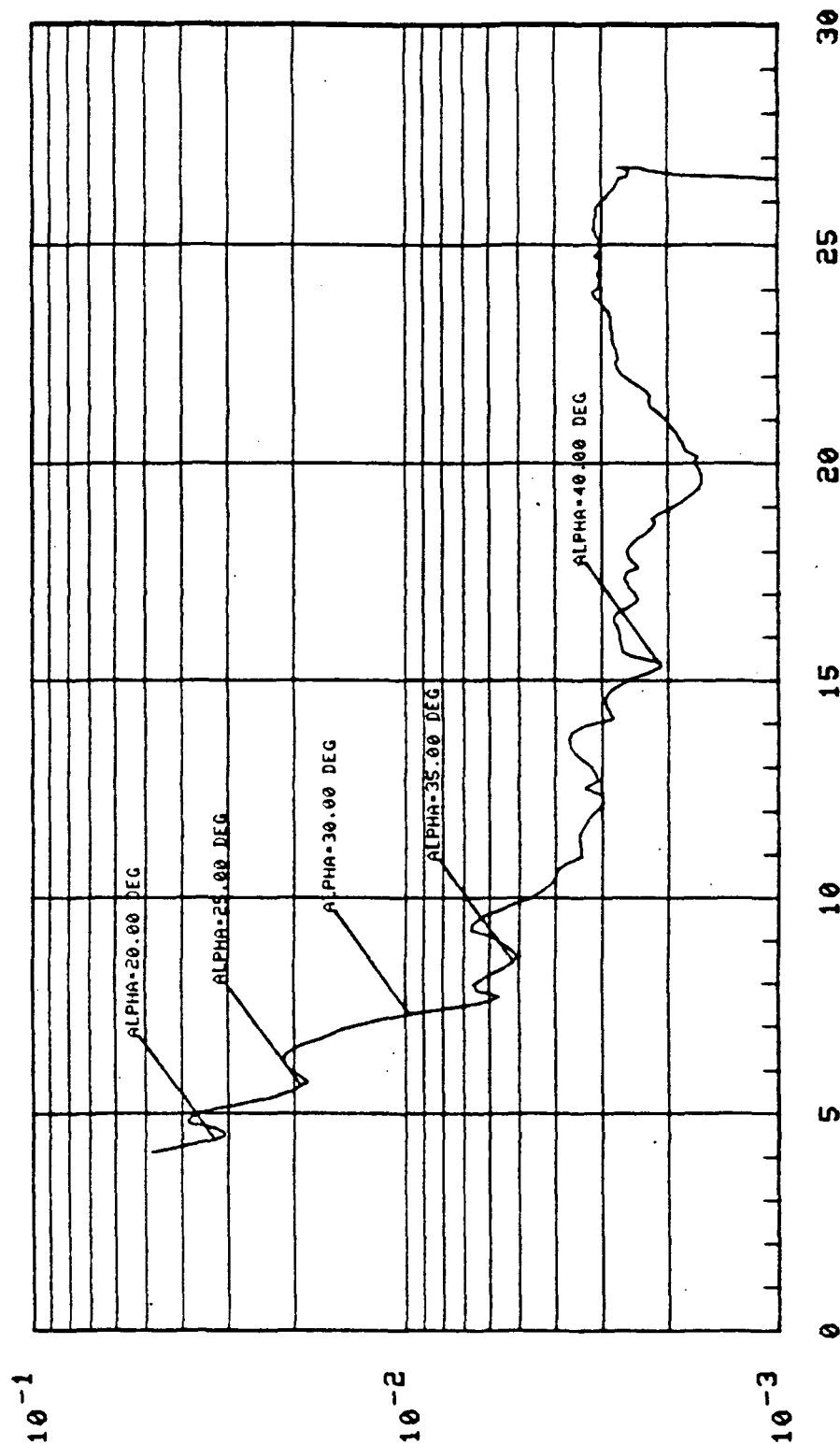
U07TS2324/H-REF 965-1300 SEC



FILM COEFF - H/H-REF

# STS-5 (107 FT LENGTH CL X/L=0.791) FLIGHT PARAMETER COMPARIS

U07T9232A/H-PEF 150-1350 SEC



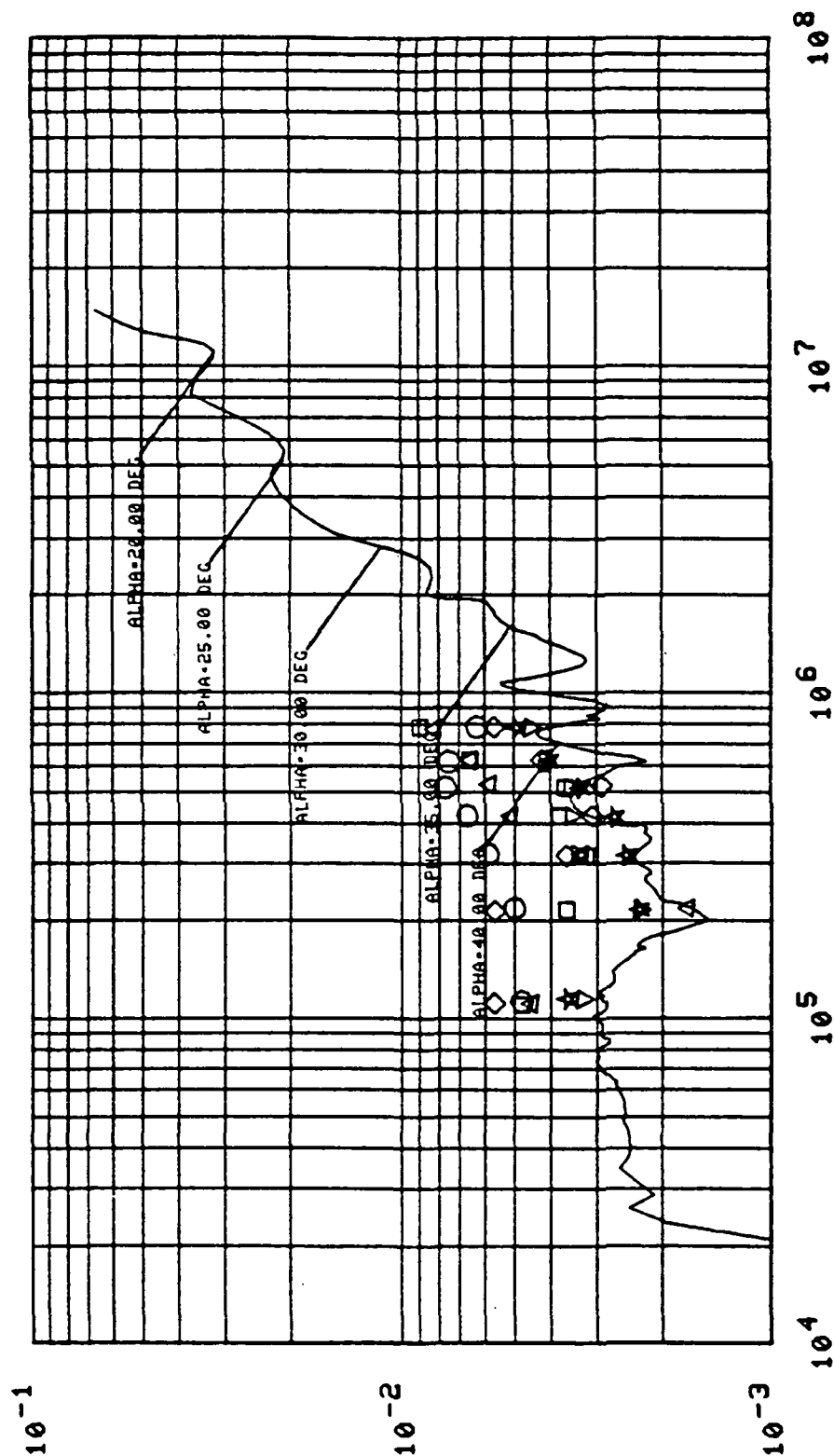
FLIGHT COVER - H/H-REF

# STS-3 (107 FT LENGTH CL X/L=0.791) FLIGHT PARAMETER COMPARIS

QH39 ALPHA - 20 DEGREES  
 QH39 ALPHA - 25 DEGREES  
 QH39 ALPHA - 30 DEGREES  
 QH39 ALPHA - 35 DEGREES  
 QH39 ALPHA - 40 DEGREES  
 QH39 ALPHA - 45 DEGREES

U07T923E4/H-REF 200-1380 SEC

○ □ ◇ △ ★



LIFT COEFF - H/H-REF

REYNOLDS NUMBER (NS)

BASE TIME - 07745684.000 SEC.

06/18/84

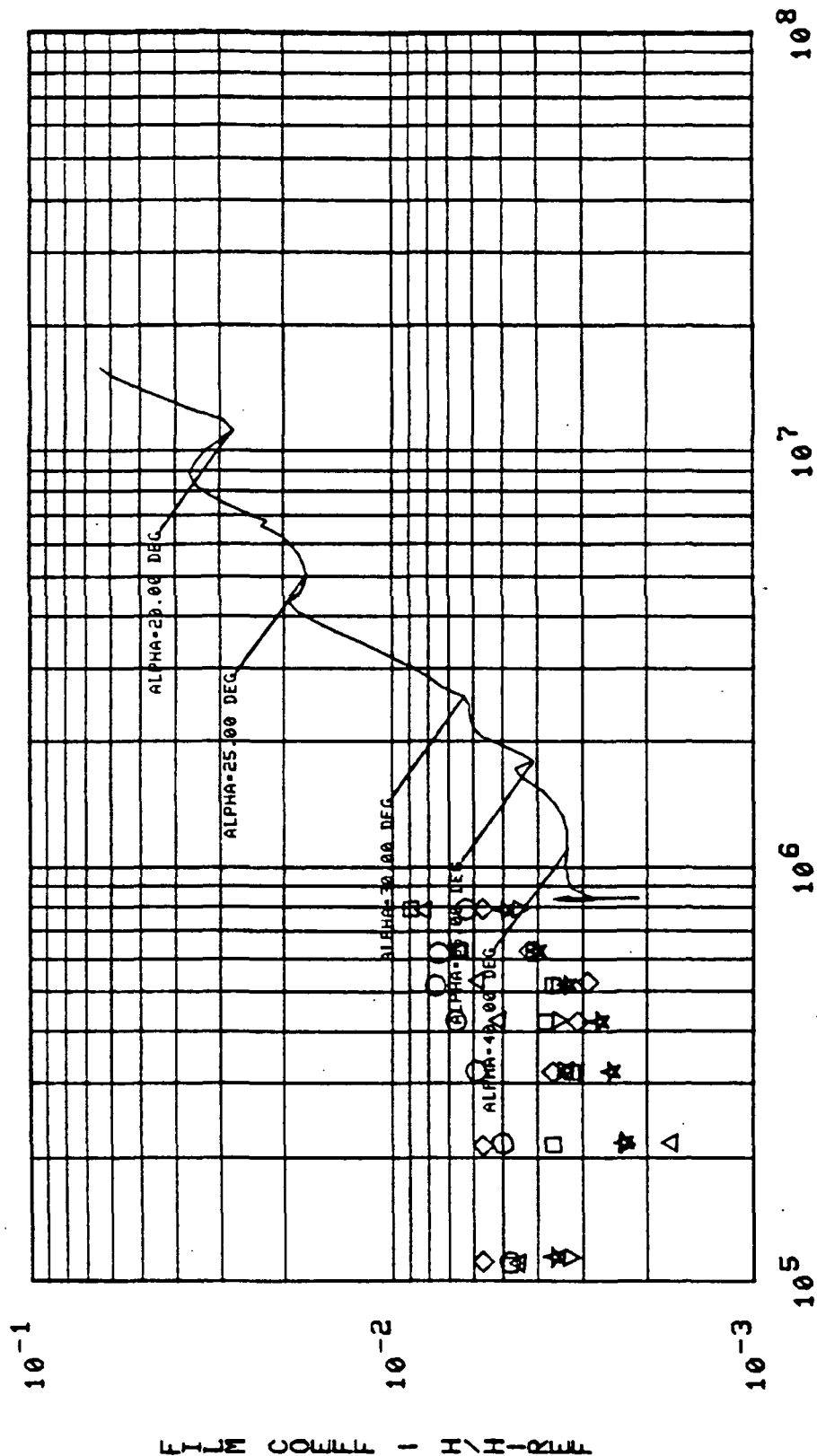


# STS-4 (107 FT LENGTH CL X/L=0.791) FLIGHT PARAMETER COMPARIS

007792324/H-REF 965-1300 SEC

- 0H39 ALPHA - 20 DEGREES
- 0H39 ALPHA - 25 DEGREES
- 0H39 ALPHA - 30 DEGREES
- 0H39 ALPHA - 35 DEGREES
- 0H39 ALPHA - 40 DEGREES
- 0H39 ALPHA - 45 DEGREES

□ ○ × △ ★



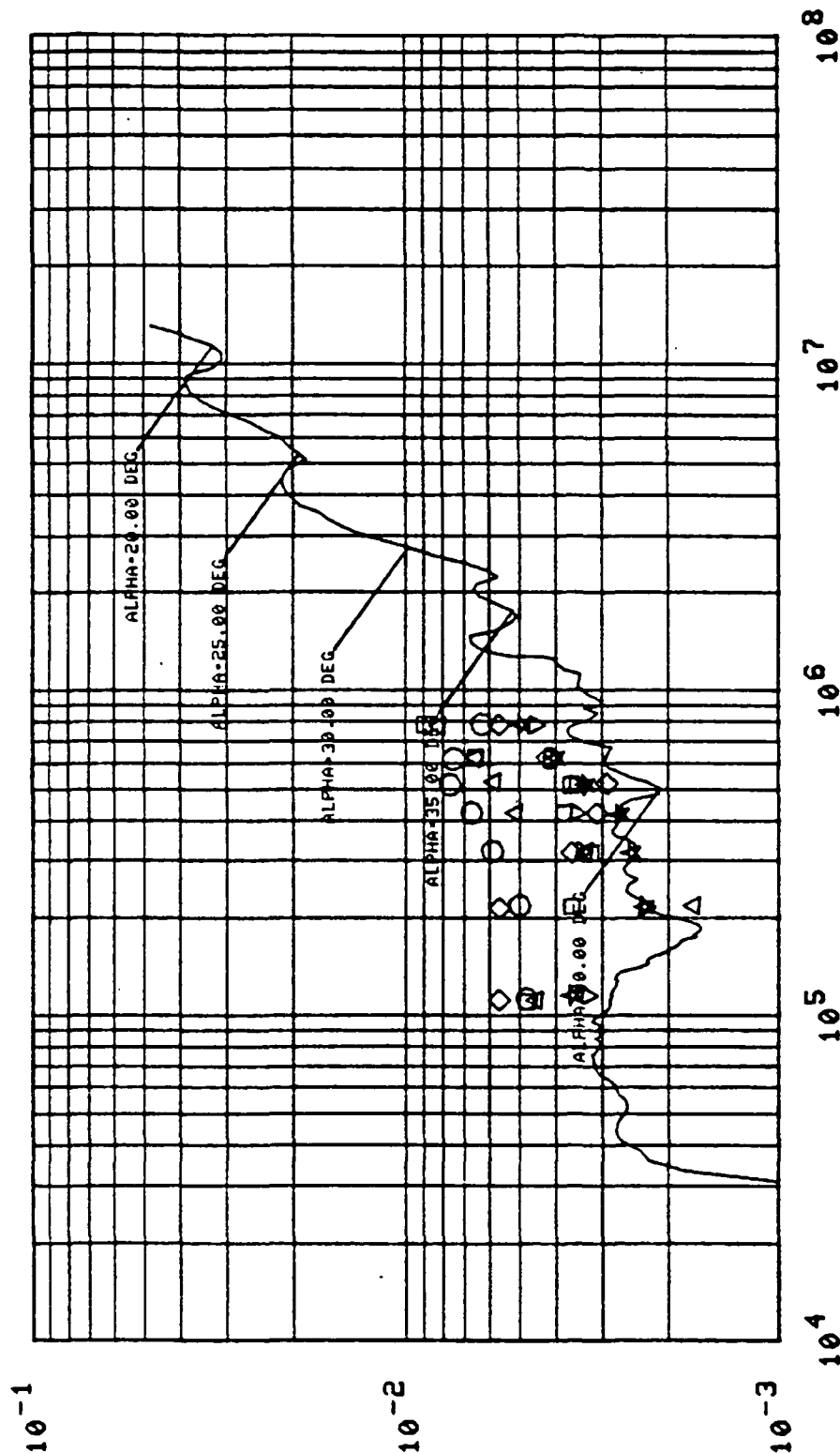
REYNOLDS NUMBER (NS) 06/19/84 BASE TIME - 16040423.000 SEC.

# STS-5 (107 FT LENGTH CL X/L=0.791) FLIGHT PARAMETER COMPARIS

007T92324/H-PEF 150-1350 SEC

OH39 ALPHA - 20 DEGREES  
 OH39 ALPHA - 25 DEGREES  
 OH39 ALPHA - 30 DEGREES  
 OH39 ALPHA - 35 DEGREES  
 OH39 ALPHA - 40 DEGREES  
 OH39 ALPHA - 45 DEGREES

○ □ ◇ △ ★

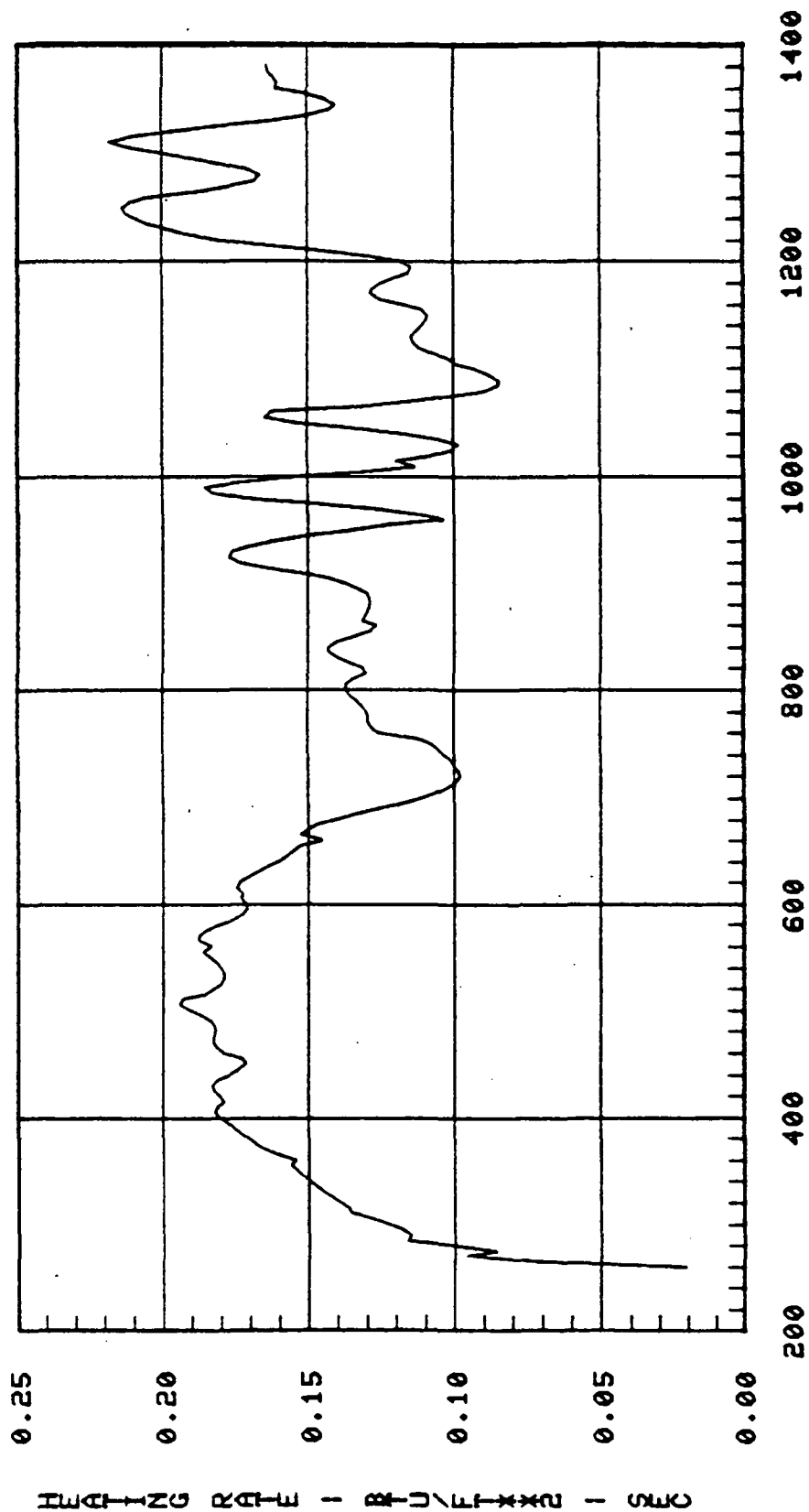


CD = H/H-RUE

REYNOLDS NUMBER (NS)      06/19/84  
 BASE TIME - 27698591.000 SEC.

# STS-3 (107 FT LENGTH CL X/L=0.791) FLIGHT PARAMETER COMPARIS

007T9232A

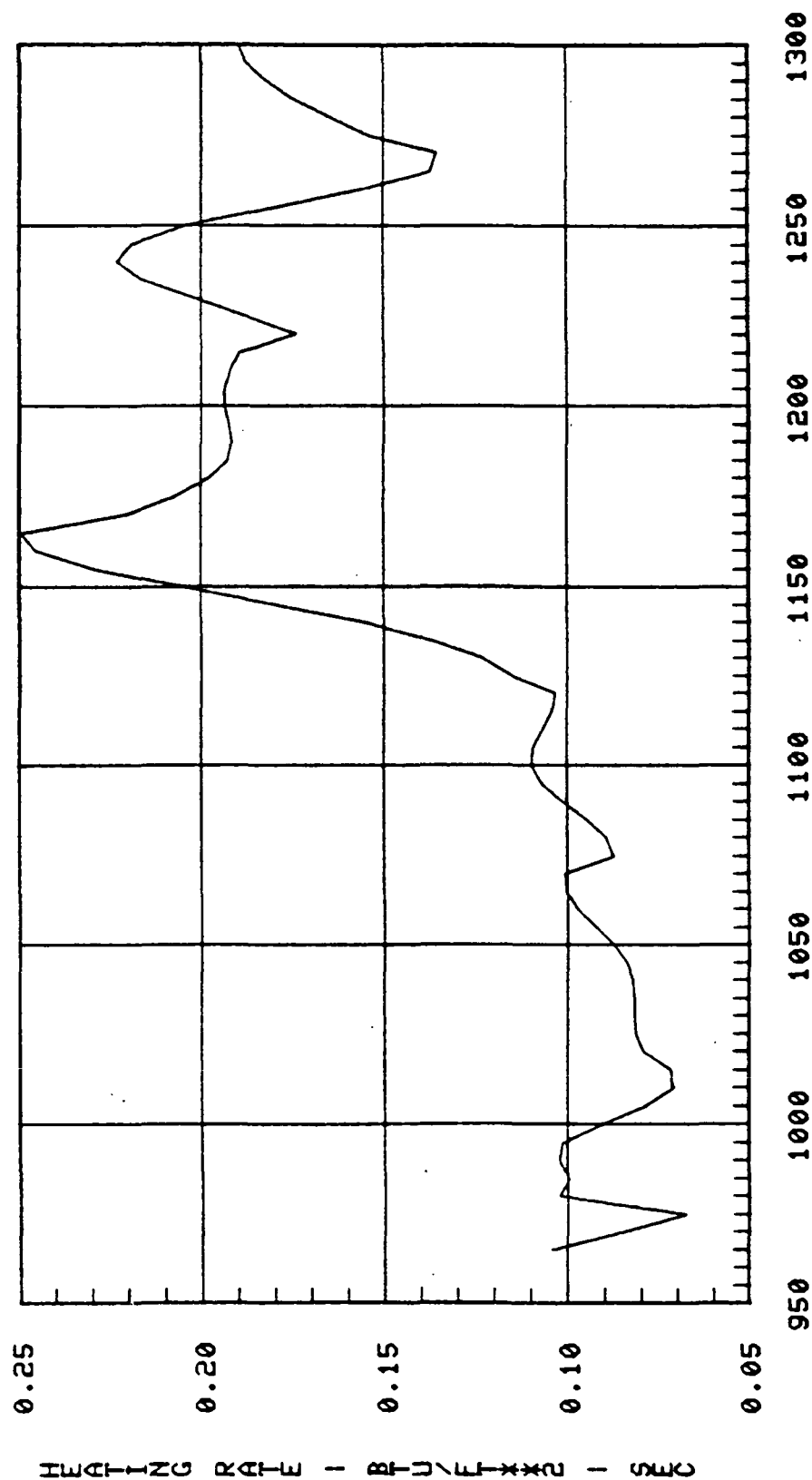


TIME - SECONDS

06/18/84

# STS-4 (107 FT LENGTH CL $X/L=0.791$ ) FLIGHT PARAMETER COMPARIS

U07T9232A

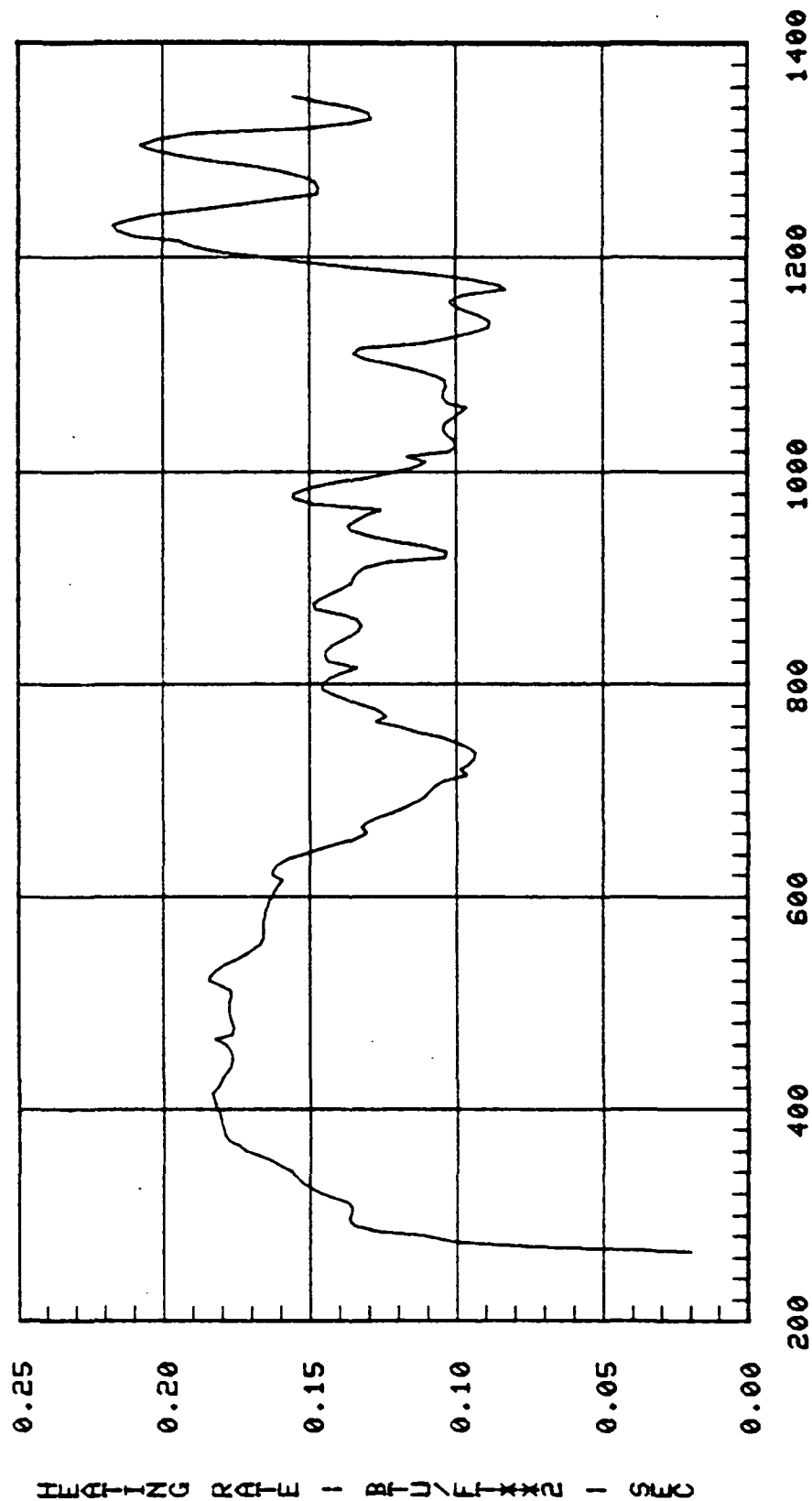


TIME - SECONDS

06/19/84

# STS-5 (107 FT LENGTH CL X/L=0.791) FLIGHT PARAMETER COMPARIS

007T32324

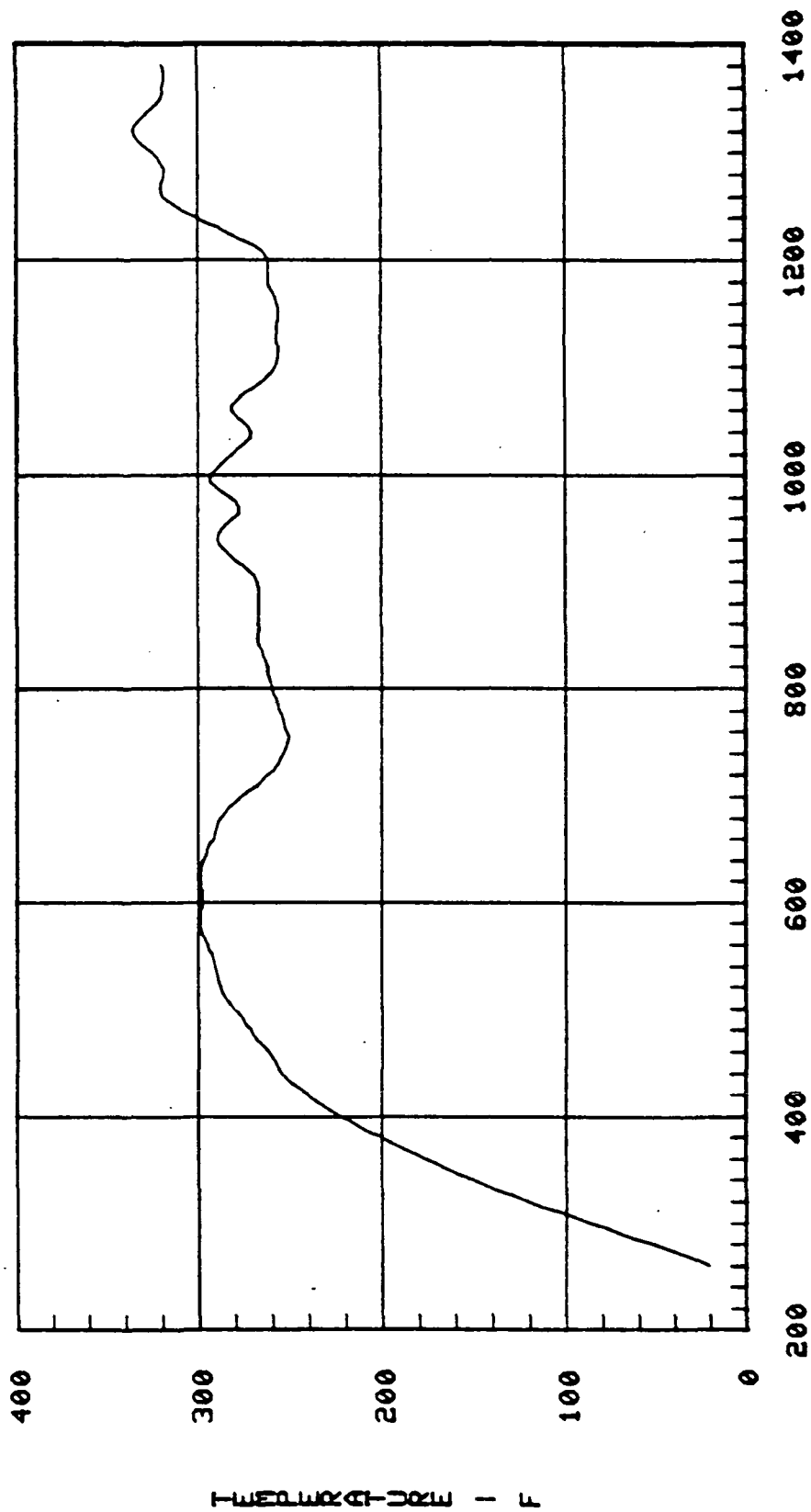


TIME - SECONDS

06/19/84

# STS-3 (107 FT LENGTH CL X/L=0.791) FLIGHT PARAMETER COMPARIS

U07TS2324

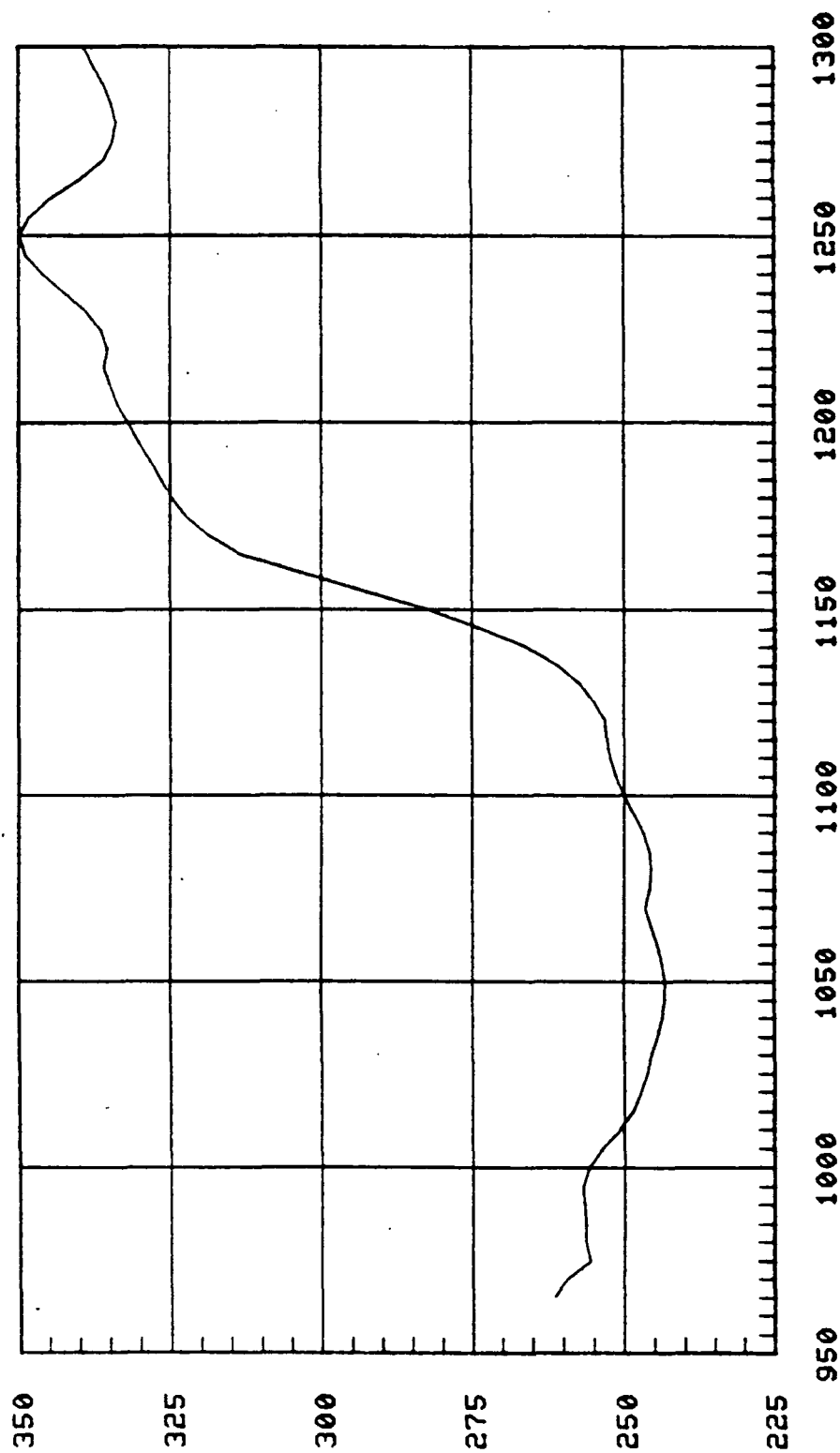


TIME - SECONDS

06/18/84

# STS-4 (107 FT LENGTH CL X/L=0.791) FLIGHT PARAMETER COMPARIS

U07T92324



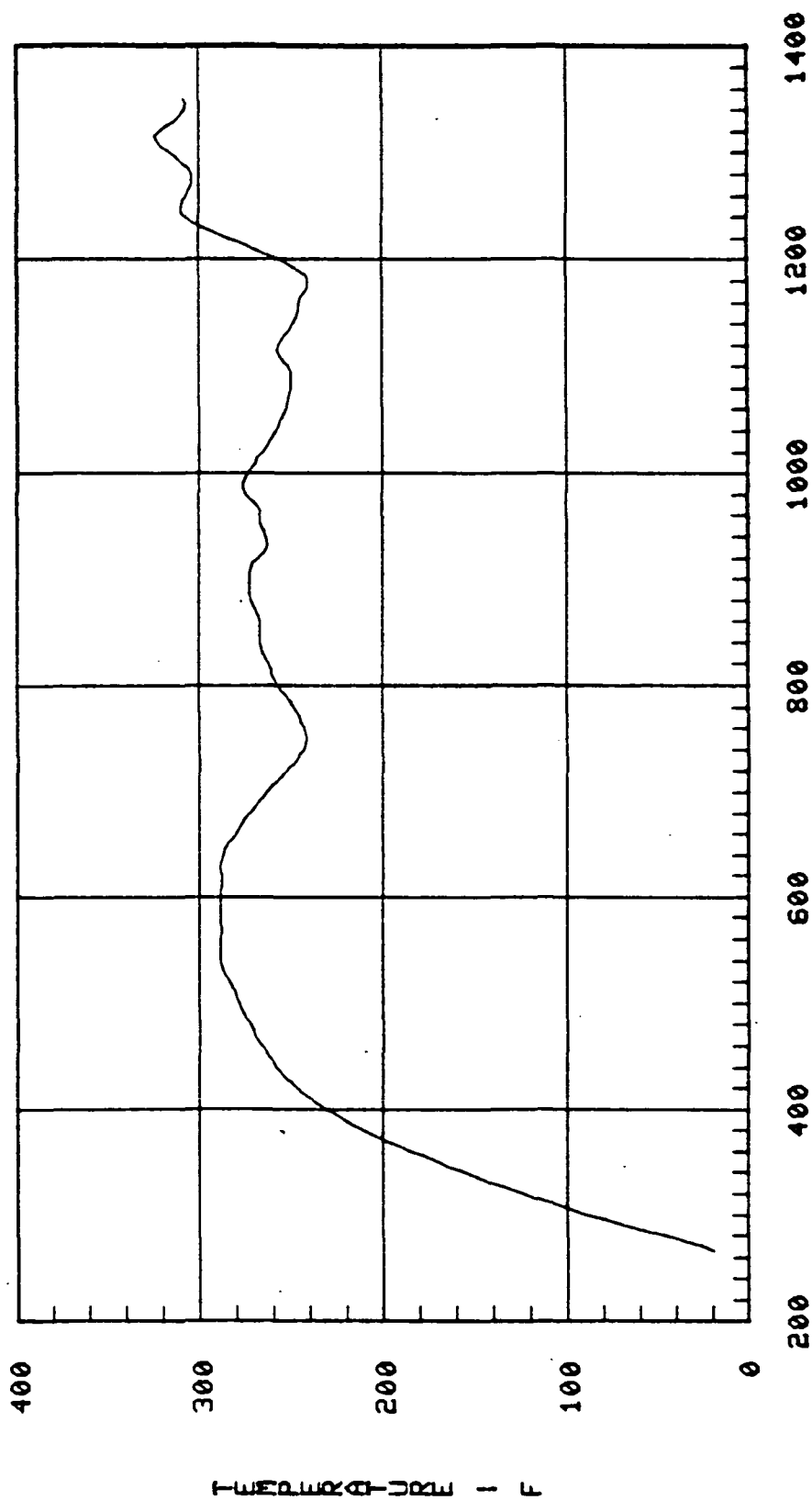
TIME - SECONDS

06/19/84

TEMPERATURE - F

# STS-5 (107 FT LENGTH CL $X/L=0.791$ ) FLIGHT PARAMETER COMPARIS

007T9232H



TIME - SECONDS

06/19/84



1. Report No. NASA-CR-171795		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle COLUMBIA: THE FIRST FIVE FLIGHTS ENTRY HEATING DATA SERIES VOLUME 6 The Upper Lee Side Surface Centerline				5. Report Date July 1984	
				6. Performing Organization Code 24-50	
7. Author(s) S. D. Williams				8. Performing Organization Report No. LEMSCO-19346	
9. Performing Organization Name and Address Lockheed Engineering and Management Services Co., Inc. 1830 NASA Road 1 Houston, Texas 77058				10. Work Unit No. J.O. 52-309	
				11. Contract or Grant No. NASA 9-15800	
12. Sponsoring Agency Name and Address NASA Johnson Space Center Structures and Thermal Division Houston, Texas				13. Type of Report and Period Covered Contractor Report	
				14. Sponsoring Agency Code	
15. Supplementary Notes					
16. Abstract  Entry heating flight data and wind tunnel data on the upper lee side surface centerline. are presented for the first five flights of the Space Shuttle Orbiter. The heating rate data is presented in terms of normalized film heat transfer coefficients as a function of angle-of-attack, Mach number, and Normal Shock Reynolds numbers. The surface heating rates and temperatures were obtained via the JSC NONLIN/INVERSE computer program. Time history plots of the surface heating rates and temperatures are also presented.					
17. Key Words (Suggested by Author(s)) Heating rate Film heat transfer coefficient Mach number Reynolds number      Flight heating data Wind tunnel              Shuttle Orbiter			18. Distribution Statement  Subject category: Upper Lee Side Surface Centerline Entry Heating		
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages 347	
				22. Price*	

\*For sale by the National Technical Information Service, Springfield, Virginia 22161